DOWNTOWN DANBURY

TRANSIT-ORIENTED DEVELOPMENT STUDY

CITY OF DANBURY, CT | JANUARY 2019

APPENDIX

DOWNTOWN DANBURY

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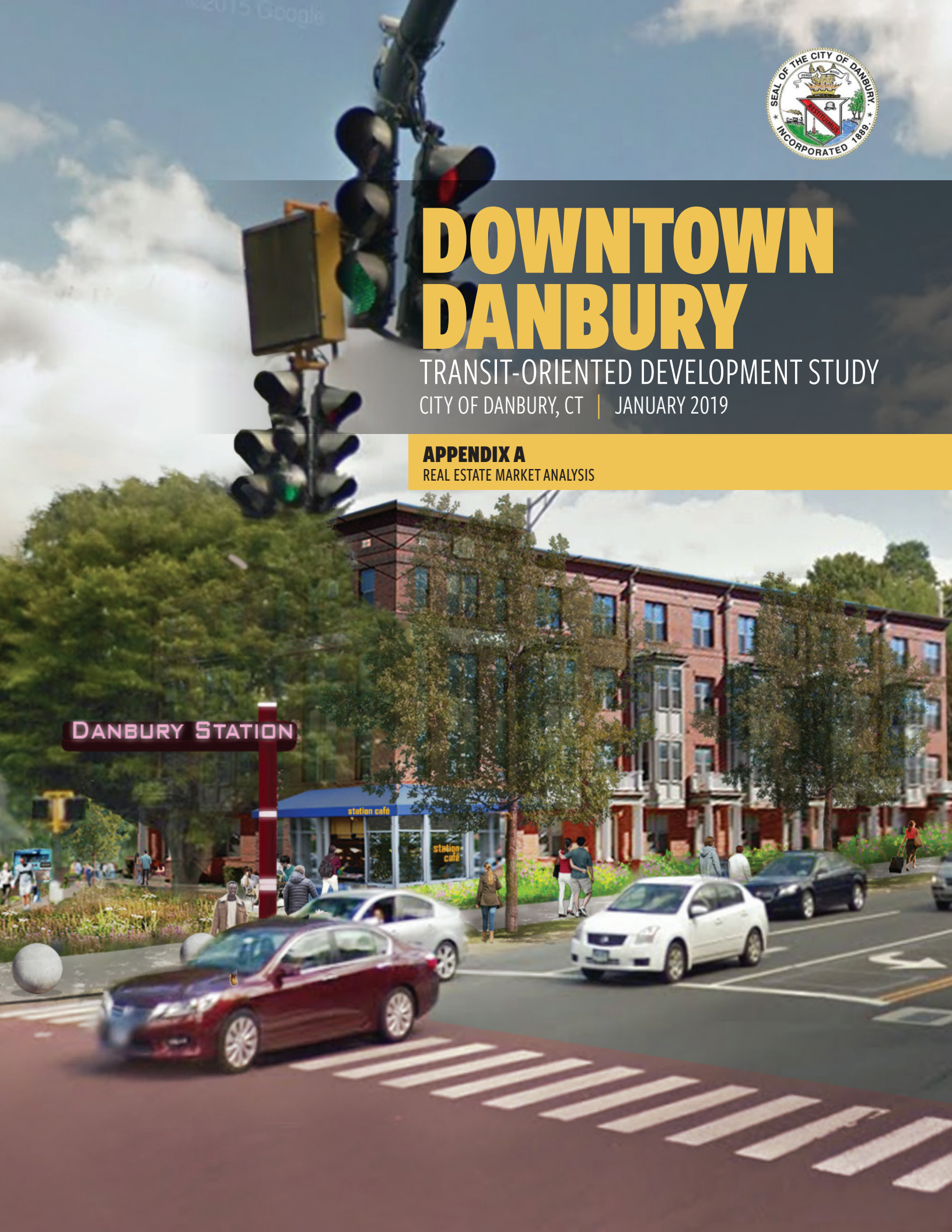

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APPENDIX A

REAL ESTATE MARKET ANALYSIS

W-ZHA, LLC

MEMORANDUM

TO: Goody Clancy Associates

FROM: W-ZHA

RE: Economic Framework and Downtown Housing Potential

DATE: November 15, 2017

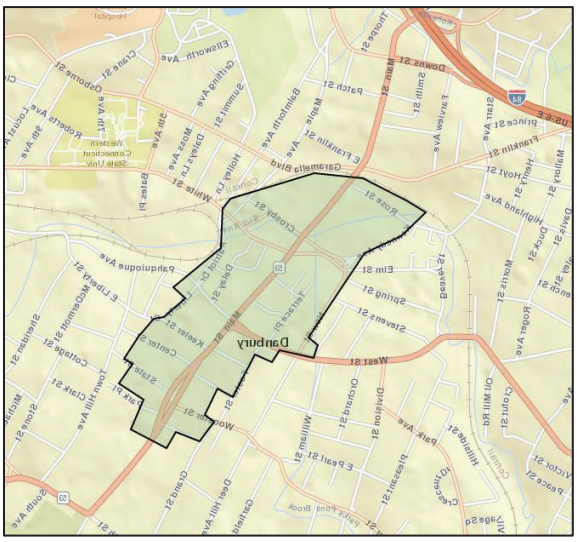
INTRODUCTION

This Technical Memorandum describes the economic framework within which Downtown Danbury functions. It also highlights residential market opportunities given the household dynamics and growth.

DEFINITIONS

Figure 1

Downtown Danbury

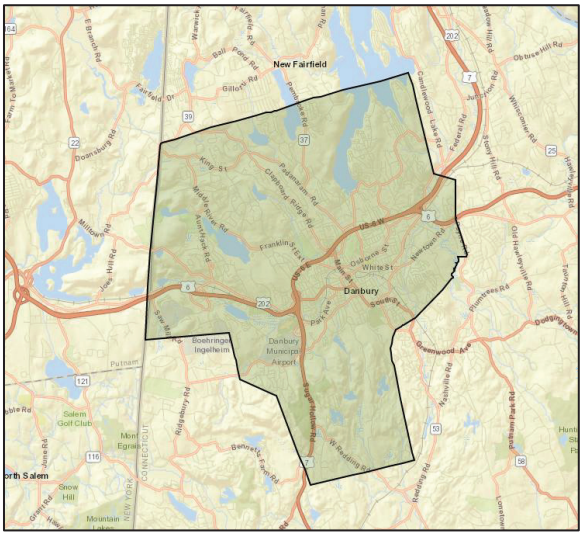


Source: ESRI; W-ZHA

For purposes of this analysis Downtown Danbury is defined as depicted on the map. The 2017 population within the Downtown is estimated to be 2,159.

Figure 2

City of Danbury

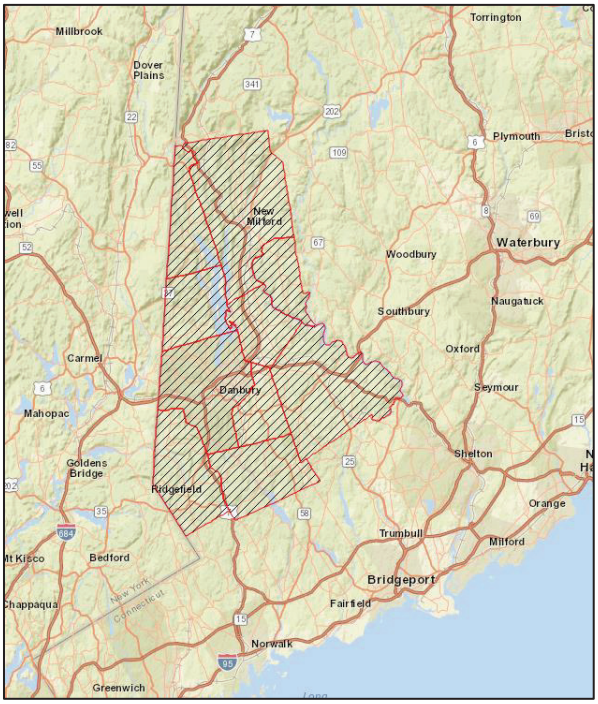


Source: ESRI; W-ZHA

With approximately 84,790 residents, the City of Danbury is the 7th largest city in Connecticut. In terms of population, Danbury is slightly smaller than Norwalk and slightly larger than New Britain. There are 30,070 households in Danbury.

Figure 3

Western Connecticut



Source: ESRI; W-ZHA

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Danbury is part of the Western Connecticut Economic Development Alliance. The Alliance consists of Danbury, Bethel, Bridgewater, Brookfield, New Fairfield, New Milford, Newtown, Redding, Ridgefield, and Sherman. Western Connecticut estimated 2017 population is 234,375.

TRENDS

Danbury's population growth rate was relatively high compared to other cities in Connecticut. Danbury grew by 3.2% between 2010 and 2015, which was comparable to Stamford's growth.

Table 1

Population by Race/Ethnicity
Danbury
2010 - 2017

	2010		2017		Change	
	#	Share	#	Share	#	%
Total	**80,893**		**84,789**		**3,896**	**4.8%**
White Alone	55,169	68.2%	53,587	63.6%	(1,582)	-2.9%
Black Alone	5,824	7.2%	6,868	7.9%	1,044	17.9%
Am Indian Alone	324	0.4%	339	0.4%	16	4.8%
Asian Alone	5,501	6.8%	6,953	8.0%	1,452	26.4%
Pacific Is'r Alone	0	0.0%	0	0.0%	0	0.0%
Some Other Race Alone	10,435	12.9%	12,634	14.8%	2,198	21.1%
Two+ Races	3,640	4.5%	4,409	5.1%	769	21.1%
Hispanic Origin	20,223	25.0%	25,013	29.5%	4,790	23.7%

Source: ESRI; W-ZHA

Between 2010 and 2017, the Hispanic population fueled Danbury's growth. Where the City grew by 4.8% during this period, the Hispanic population grew by 23.7%. Hispanics comprise 30% of the City's population.

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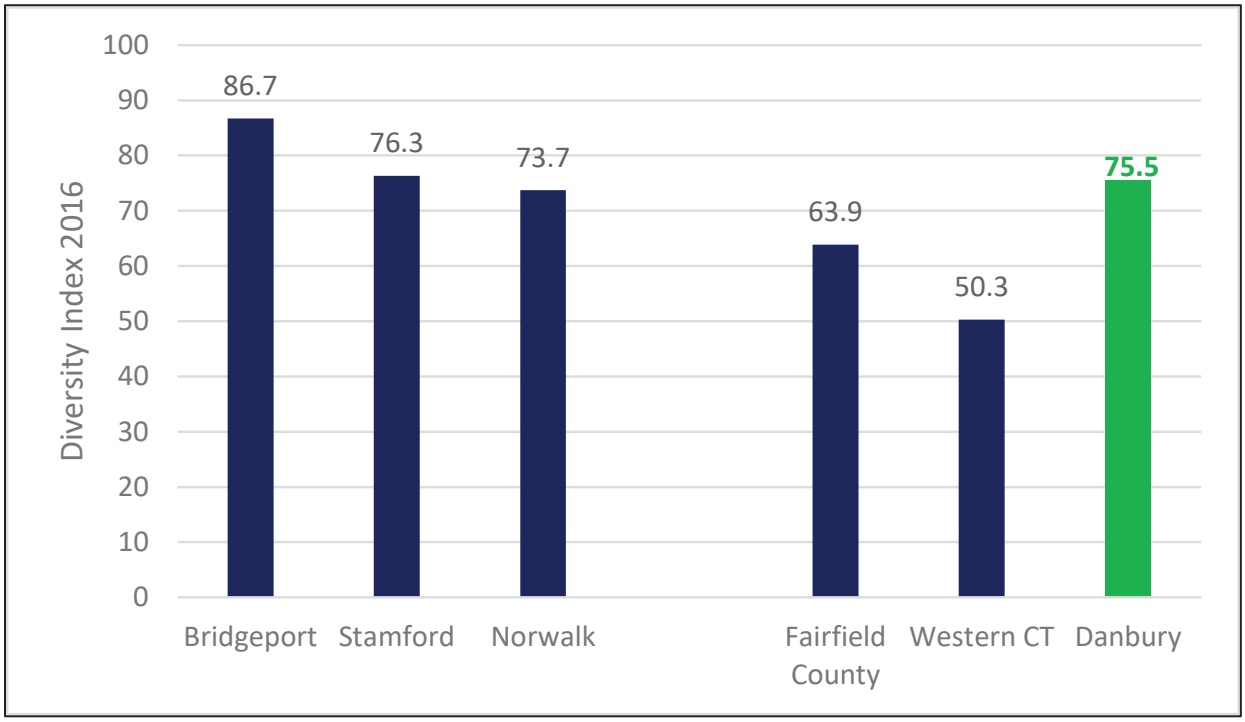
Figure 4

Diversity Index



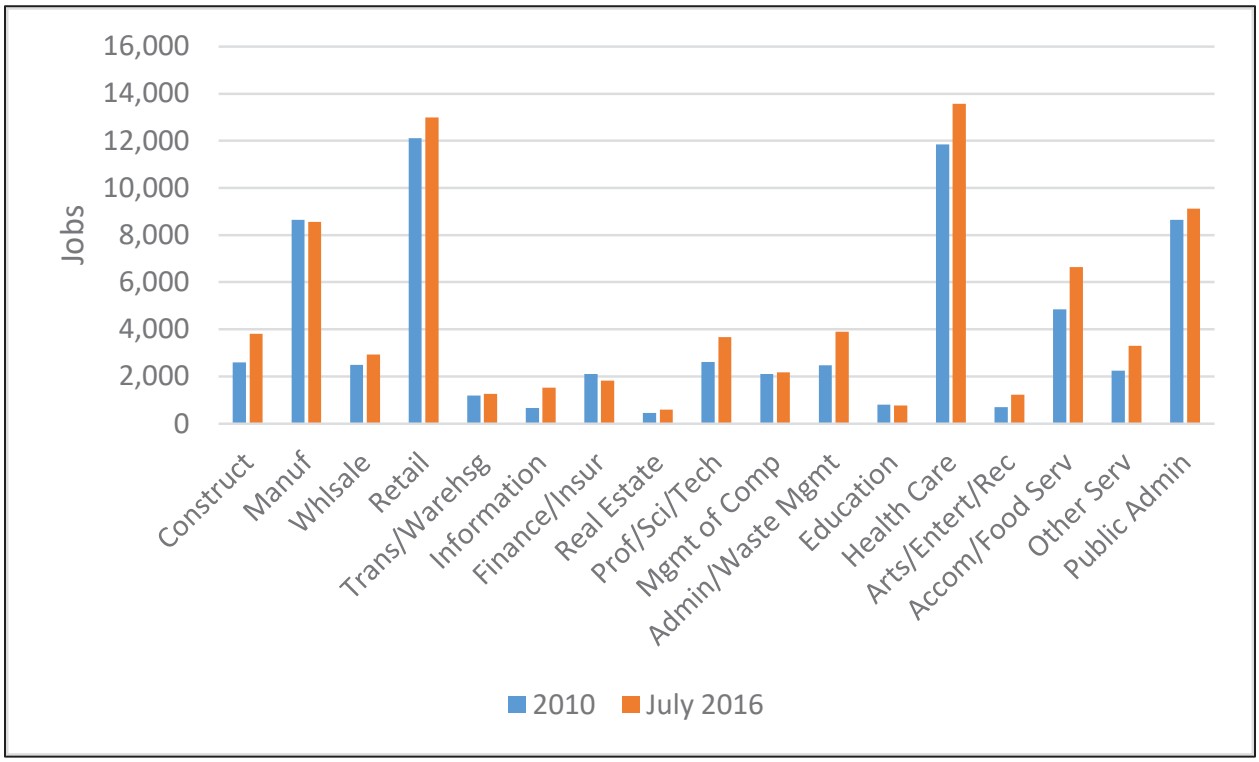
Source: ESRI; W-ZHA

Danbury's residents are notably diverse racially and ethnically. The Diversity Index measures the probability that two people from the City will be from different racial or ethnic groups. Danbury's Diversity Index is 75.5 which is higher than the Index for both Fairfield County and Western Connecticut. Danbury's Diversity Index is comparable to Connecticut's cities on the northeast corridor.

Slightly less than half of the City's foreign born population come from either Brazil, Ecuador or the Dominican Republic. According to data from the 2010 Census, 22% of Danbury's residents are not United States citizens.

Figure 5

Jobs by Industry



Source: Connecticut Department of Labor; W-ZHA

There are 79,000 jobs in the Danbury Labor Market Area. The Danbury Labor Market Area (Danbury LMA) is essentially Western Connecticut without the Towns of Redding and Ridgefield. Jobs in the Danbury LMA are concentrated in health care, retail, public administration and manufacturing. Since 2010, there has been strong job growth in the accommodation and food service industries and the professional, scientific, and technical industries.

Table 2

Job Trends
Select Labor Market Areas
2010 - 2016

Labor Market Area	2010	2016	Change #	Change %
Bridgeport-Stamford	385,700	411,300	25,600	6.6%
Hartford	540,400	570,100	29,700	5.5%
New Haven	264,200	283,000	18,800	7.1%
Waterbury	64,100	67,500	3,400	5.3%
Danbury	71,600	79,200	7,600	10.6%

Source: Connecticut Department of Labor; W-ZHA

Overall job growth has been relatively strong in the Danbury LMA. Danbury LMA's rate of growth surpassed the other large Labor Market Areas in Connecticut. There are significantly fewer jobs in the Danbury LMA as compared to the Bridgeport-Stamford, Hartford, and New Haven Labor Market Areas.

Residential Market Assessment

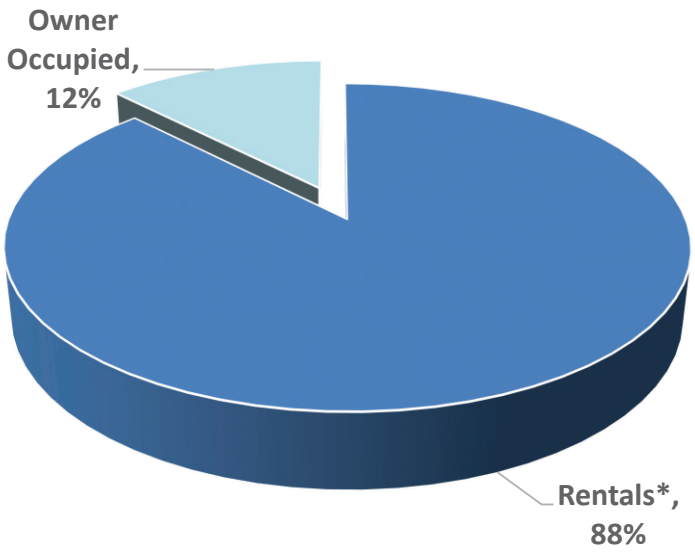
Downtown Existing Conditions

Downtown Danbury contains an estimated 1,259 residents. As of 2017, ESRI estimates that over half (52%) of the residents in the Downtown are of Hispanic origin. Downtown Danbury has a Diversity Index of 86.8 which is higher than the City's Index of 75.5. The Diversity Index indicates the probability that two people from the same area will be from different race or ethnic groups.

According to the American Community Survey 2011-2015 there were 987 housing units in the Downtown. 12% of Downtown's housing units are vacant. The American Community Survey 2011-2015 data does not incorporate Kennedy Flats, a 374 unit apartment complex built in 2016. With Kennedy Flats included there are approximately 1,361 housing units in Downtown Danbury.

Figure 6

Occupied Housing Stock by Tenure



* Assumed Kennedy Flats is 90% occupied.

Source: American Community Survey 2011-2015; W-ZHA

Occupied housing in Downtown Danbury is predominantly rental housing. Adjusting the data to incorporate Kennedy Flats, approximately 88% of the occupied housing units Downtown are rental units.

The average rent for the older housing stock is approximately $840 per month. Today, monthly rent at Kennedy Flats is approximately $1,700 per month for a one-bedroom apartment and $2,015 for a two-bedroom apartment. The vast majority of the housing stock Downtown would be considered "affordable" to the average Danbury resident.

Table 3

Year Residential Structure Built
Downtown Danbury

Year Built	Units	%
Built 2010 or later	374	27.5%
Built 2000 to 2009	40	2.9%
Built 1990 to 1999	63	4.6%
Built 1980 to 1989	107	7.9%
Built 1970 to 1979	43	3.2%
Built 1960 to 1969	70	5.1%
Built 1950 to 1959	102	7.5%
Built 1940 to 1949	78	5.7%
Built 1939 or earlier	484	35.5%
Total Units	1,361	100.0%

Source: American Community Survey 2011-2015 modified to include the Kennedy Flats apartment complex; W-ZHA

One reason rents are low Downtown is because the Downtown housing stock is old. Just over a third of the residential stock Downtown was built before 1939. Excluding Kennedy Flats, 1941 was the median year Downtown housing was built.

Table 4

Residential Units in Structure
Downtown Danbury

Units in Structure	Units	%
1, detached	93	6.8%
1, attached	22	1.6%
2	135	9.9%
3 or 4	213	15.6%
5 to 9	119	8.7%
10 to 19	85	6.2%
20 to 49	111	8.1%
50 or more	584	42.9%
Total Units	1,361	100.0%

Source: American Community Survey 2011-2015 modified to include the Kennedy Flats apartment complex; W-ZHA

Downtown Danbury's housing stock is nicely diverse in terms of product type. There is a mixture of single family, townhouse and different scales of multi-family rental in the Downtown.

Table 5

Occupied Housing Units by Year Household Moved In Downtown Danbury

Moved In to Downtown	%
Moved in 2010 or later*	55.1%
Moved in 2000 to 2009	21.3%
Moved in 1990 to 1999	5.2%
Moved in 1980 to 1989	2.2%

* Assumed Kennedy Flats is 90% occupied.

Source: American Community Survey 2011-2015 modified to include the Kennedy Flats apartment complex; W-ZHA

Many of the households that reside in Downtown Danbury have moved there recently. Over half of the households Downtown have moved into the Downtown since 2010. The American Community Survey data was modified to include Kennedy Flats. Kennedy Flats was assumed to be 90% occupied with all residents moving in after 2010.

According to interviews with Kennedy Flats management, the project is performing as the developer projected. The occupants at Kennedy Flats are either young professionals or older Danbury residents that sold their single family homes. There was more "empty nester" demand than was expected according to the management. The Kennedy Flats residents are interested in the "lifestyle" amenities Kennedy Flats offers such as social events, a club room, a fitness center and the urban, walkable environment.

According to Kennedy Flats management, the primary competitive projects to Kennedy Flats are Abbey Woods and Crown Point. Both of these apartment complexes are conveniently located to I-84 and Route 7. Their location is also convenient to shopping and dining destinations. Neither of these apartment complexes offer an urban, walkable experience.

Residential Market Potential

The residential market for housing in Downtown Danbury consists of both new households moving into the area that seek an urban environment and existing households that are moving and seek an urban environment. The primary trade area for housing in Downtown Danbury is assumed to be the area within approximately a 20- to 25-minute drive to Danbury.

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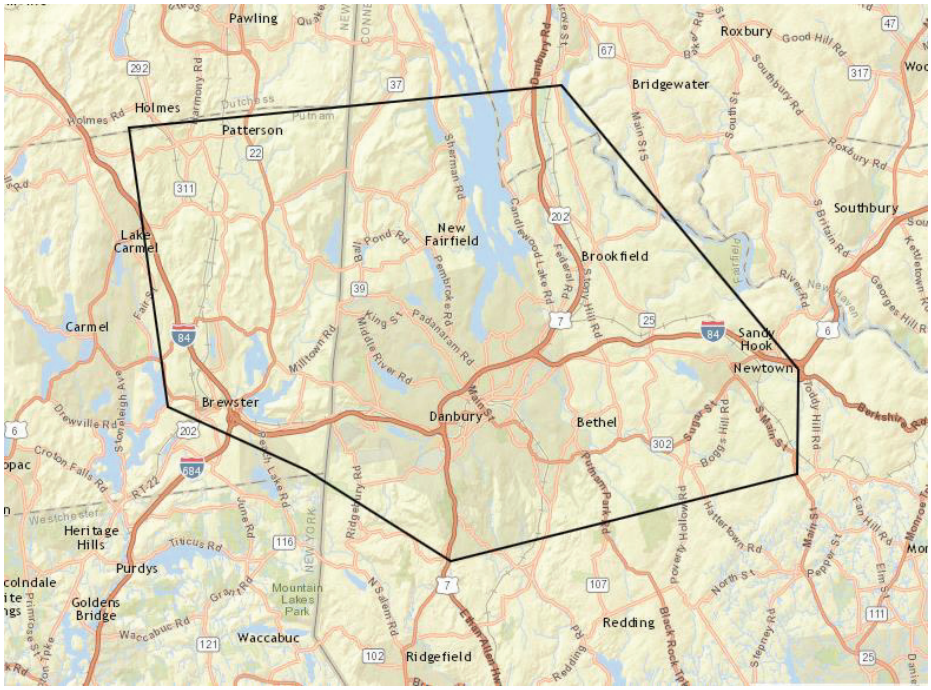
Figure 7

Residential Market Primary Trade Area



Source: ESRI; W-ZHA

The market area to the south is truncated slightly because of competition from the urban centers to the south. The market area to the west is slightly expanded because there are not competitive urban centers and the lower taxes in Connecticut are attractive to households either living or considering a New York location nearby.

Table 6

Household Projections
Residential Primary Trade Area
2017, 2022

	2017	2022	Change
Households	63,886	65,565	1,679
Families	45,047	46,126	1,079
Owner Occupied Housing Units	45,390	46,549	1,159
Renter Occupied Housing Units	18,496	19,016	520

Source: ESRI; W-ZHA

ESRI projects that 1,678 new households will move into the residential trade area over the next five years. Approximately two-thirds of these households will be families seeking home ownership opportunities. ESRI projects that by 2022, new households will demand 520 rental housing units.

Table 7

Household Projections
Residential Primary Trade Area
2017, 2022, 2027

	2017	2022	Extrapolated 2027	Household Change 2017-22	Household Change 2017-27
<$15,000	3,769	3,773	3,777	4	8
$15,000 - $24,999	3,825	3,629	3,443	(196)	(382)
$25,000 - $34,999	3,484	3,116	2,787	(368)	(697)
$35,000 - $49,999	6,263	5,642	5,083	(621)	(1,180)
$50,000 - $74,999	9,938	8,908	7,985	(1,030)	(1,953)
$75,000 - $99,999	8,769	8,642	8,517	(127)	(252)
$100,000 - $149,999	13,271	14,418	15,664	1,147	2,393
$150,000 - $199,999	6,951	8,104	9,448	1,153	2,497
$200,000+	7,617	9,333	11,436	1,716	3,819
Total	63,887	65,565	68,139	1,678	4,252

Source: ESRI; W-ZHA

The five year projections by income group were extrapolated to 2027. All of the trade area's household growth is projected to occur among households with median incomes above $100,000. These households can afford market rate multi-family units. It is assumed that the households moving into the trade area will have the same lifestyle and lifestage characteristics as those upper income households currently residing in the trade area.

Table 8

Downtown Housing Potential: New Households
2017- 2027

		2017 - 2027
New Households		4,250
Hshlds w/ Lifestyles Consistent with Urban Living		1,340
	Owners	*760*
	Renters	*580*

Source: ESRI; W-ZHA

Given this assumption, approximately 32% or 1,340 of the new households have lifestyles that align with urban living. Approximately 43% of this housing potential from newcomers will be for rental product (580 units) and the remainder for for-sale product (760 units). Downtown Danbury will have an opportunity to capture a share of this market.

Table 9

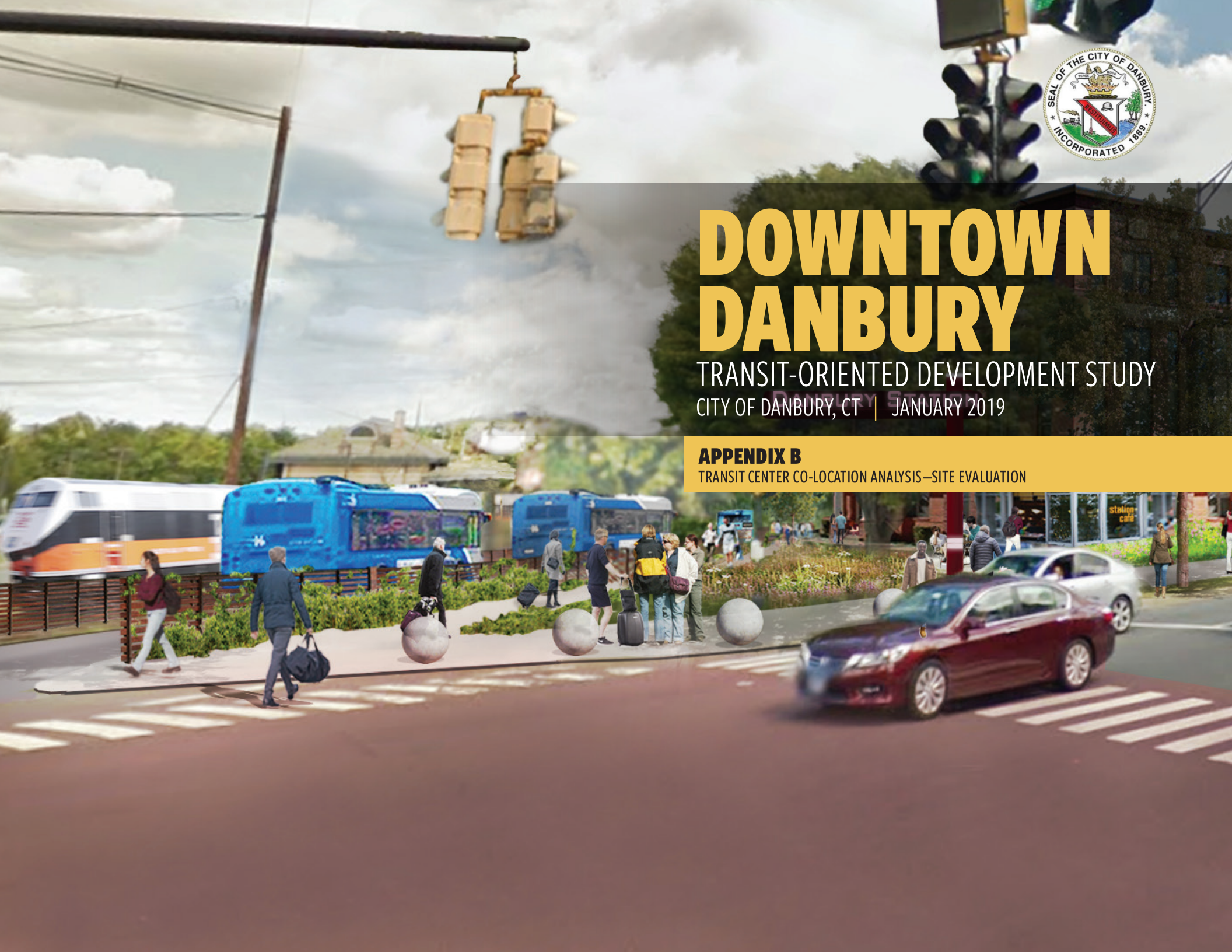
Downtown Potential: Existing Moving Households

		Annual
Hshlds w/ Lifestyles Consistent with Urban Living		26,900
Households Moving		2,984
	Owners	*568*
	Renters	*2,416*

Source: ESRI; W-ZHA

In addition to new households entering the trade area, Downtown Danbury may be an attractive residential location for those urban-inclined households moving within the market. Given psycho-demographic data, 42% of existing trade area households have lifestyles that align with urban living. In any given year, 2,984 of these urban-inclined households will move. Most of these moves (81% or 2,416 moves) will occur among the renters. These households are a potential market for Downtown.

It is important to note that a vast majority of the urban-inclined moving households (82%) cannot afford new market rate housing. Only 545 of the 2,984 households moving in a given year have incomes over $70,000. Therefore, most of the moving market will be seeking more affordable housing options. A range of housing types and price points must be provided Downtown to capture these households.



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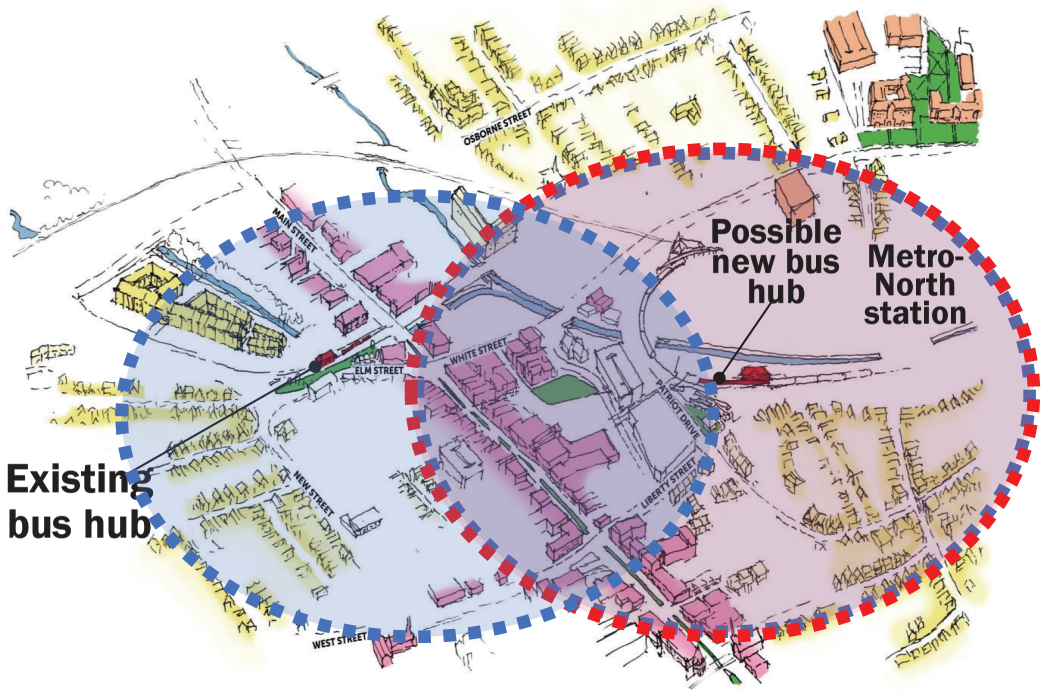
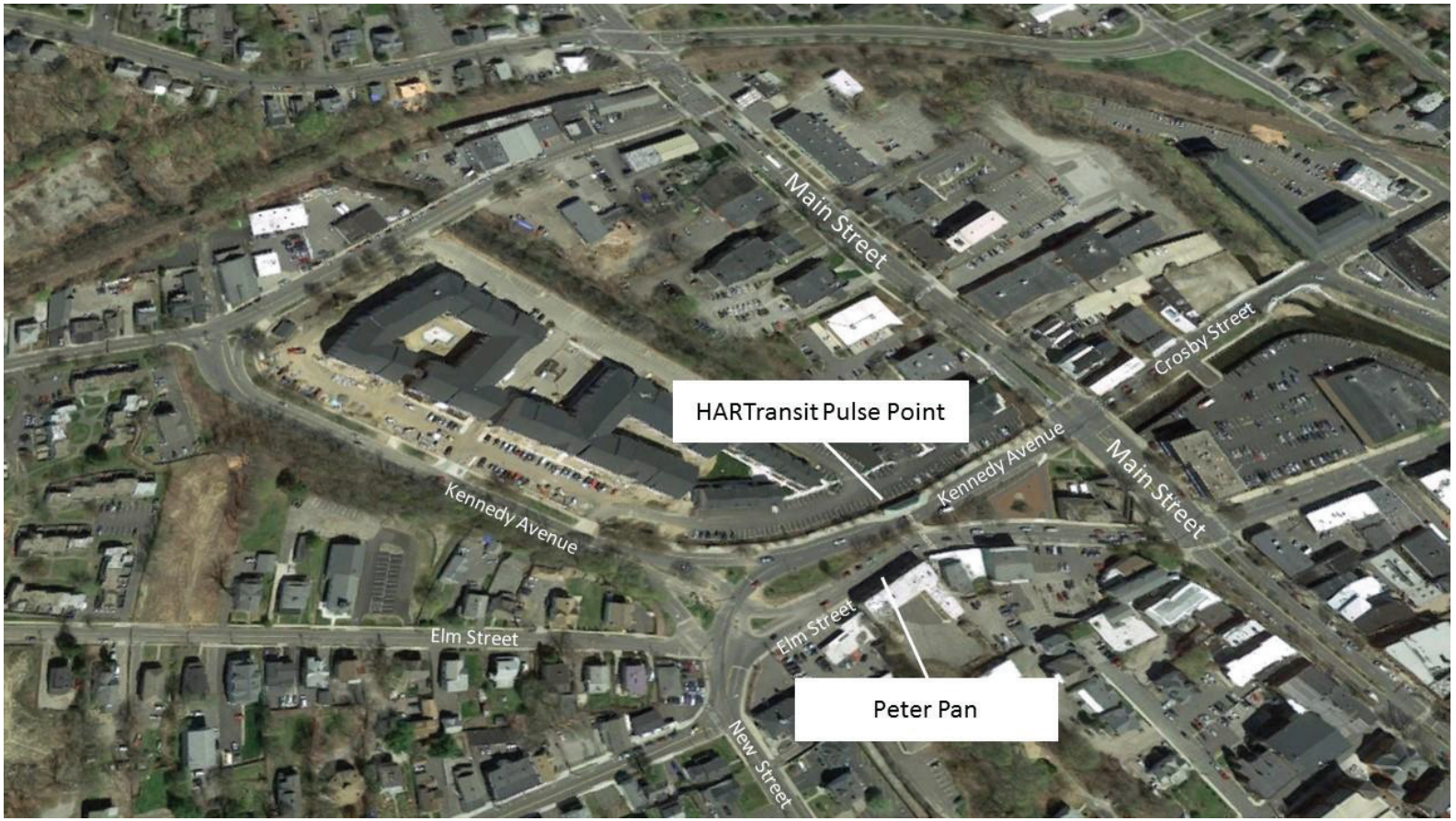
APPENDIX B

TRANSIT CENTER CO-LOCATION ANALYSIS—SITE EVALUATION

Co-Location Analysis of Transit Hubs



Existing Bus Hub



Existing Bus Hub

- **HARTransit Pulse Point**
  - *Served by CityBus, Shuttle, and Loop routes*
  - *8 CityBus routes*
    - Mon-Fri 6 AM - 6 PM, Sat 8AM-5PM
    - Arrive/depart every 30 min. (peak) & every 60 min. (off-peak)
  - *3 loop routes*
    - Mon-Sat evenings only, Sun 9AM-7PM
  - *2 commuter shuttle routes*
    - Weekdays only, limited service to Pulse Point
  - *Passenger shelters & ticket booth*
  - *Built using federal funds*

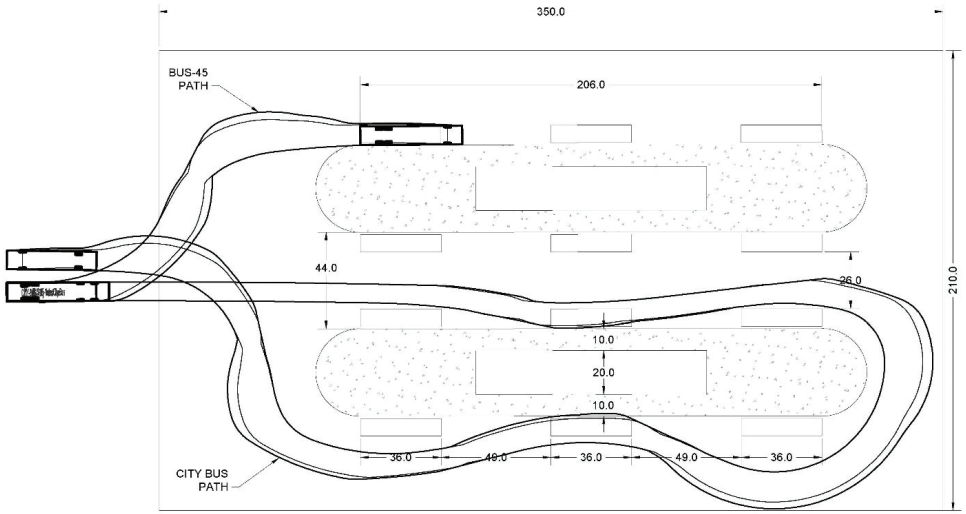
Existing Bus Hub

- **Peter Pan Bus Station**
  - *Served by Boston-Hartford-NYC route*
  - *Tickets & passenger waiting area in storefront location*
  - *One curbside bus stop*

Future Transit Hub - Assumptions

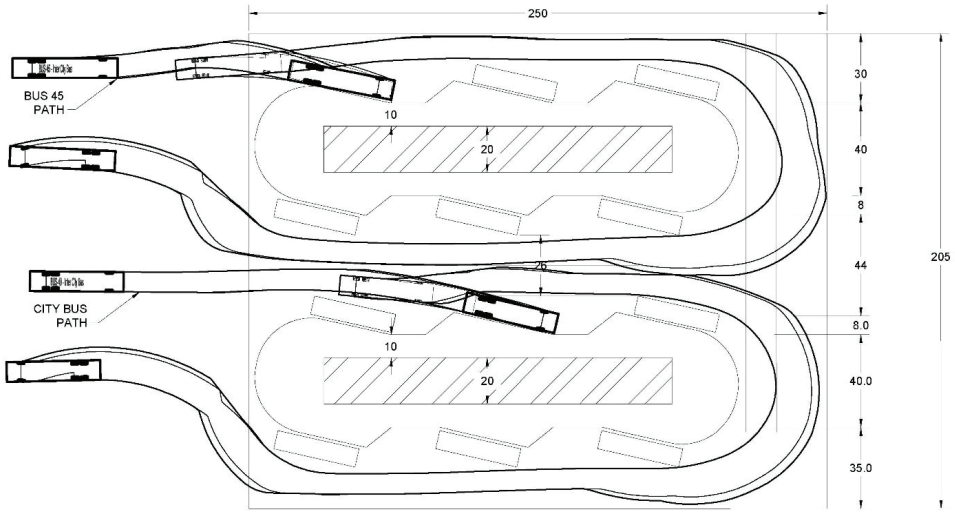
- **HARTransit Bus Operations Program**
  - *All bus routes relocated to the co-located bus facility*
  - *No changes to bus headways, frequencies, hours/days of operation*
  - *Total of 11 berths to meet current and future HARTransit operations*
    - 8 for existing routes
    - 2 to accommodate future routes/expansion
    - 1 for exchanging buses/maintenance purposes
    - Loop and Shuttle Bus routes share CityBus berths
- **Peter Pan Bus Operations Program**
  - *Existing bus route and station/waiting room relocated to the co-located bus facility*
  - *No changes to bus headways, frequencies, hours/days of operation*
  - *Total of 1 berth needed for existing Peter Pan bus route*
    - Additional berths for future expansion (TBD)

Conceptual Layouts



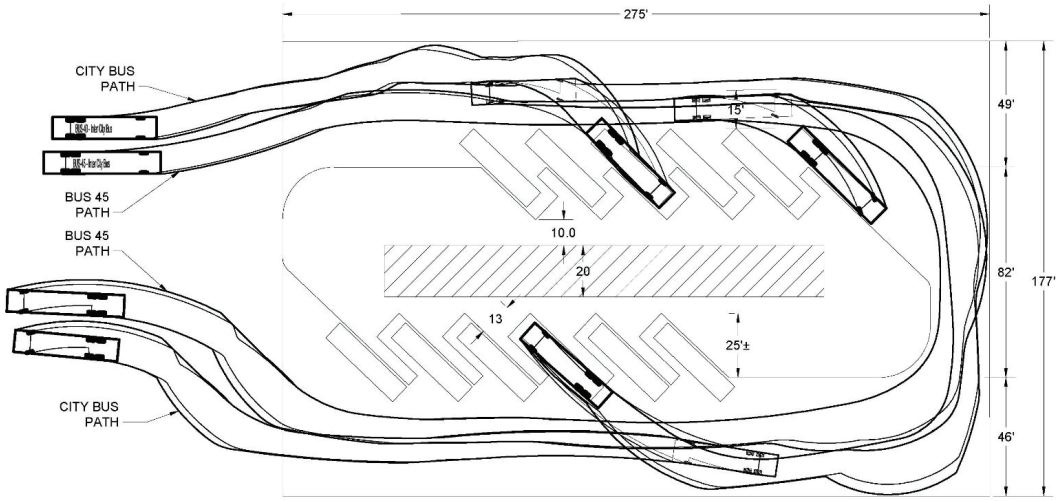
- **Parallel berths**
  - *Area required for 12 berths: 1.7 acres*
  - *Often used for on-street, curbside operations*
  - *Buses stop parallel to curb & in direction of traffic*

Conceptual Layouts



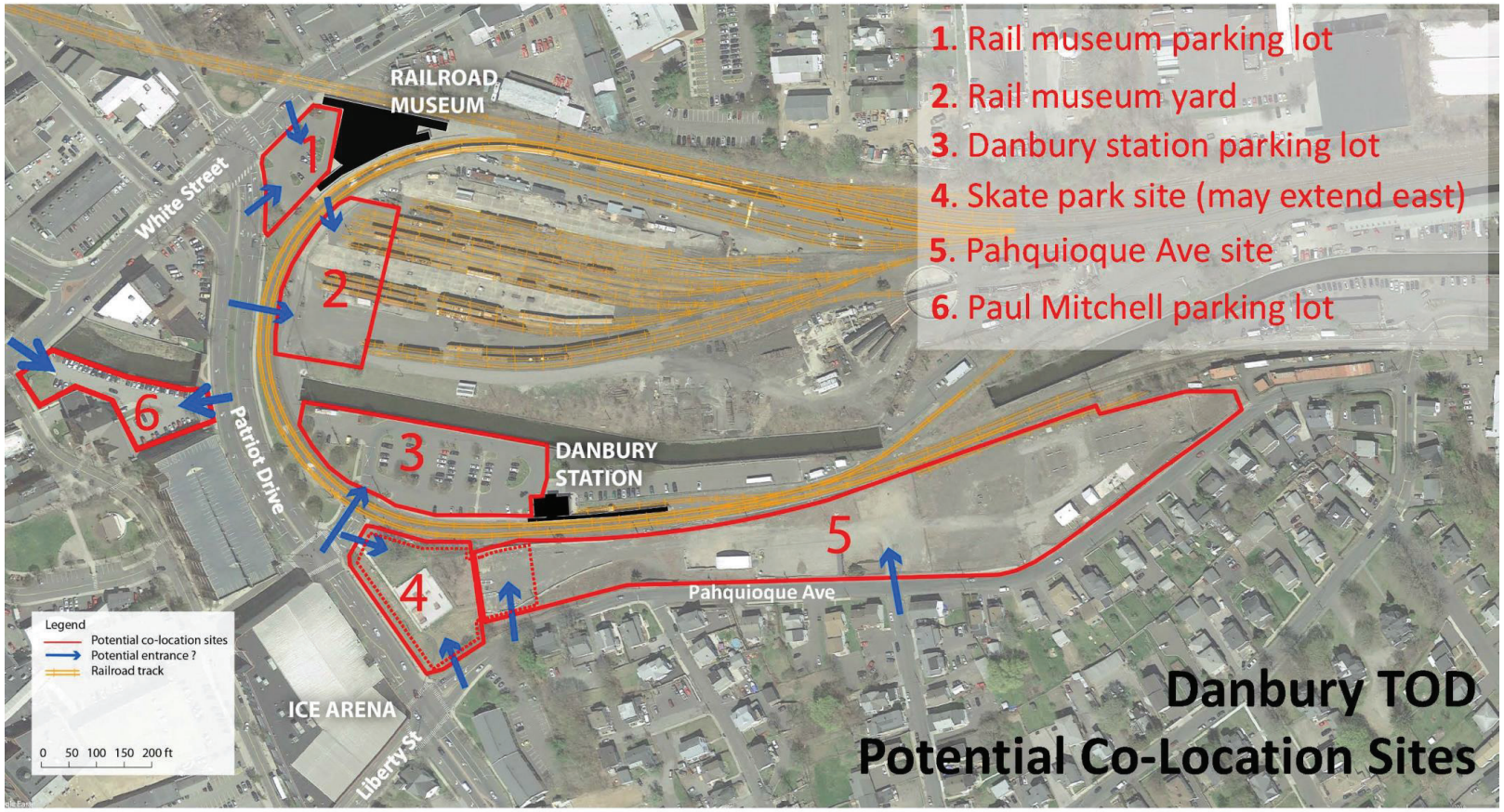
- **Sawtooth berths**
  - *Area required for 12 berths: 0.96 acres*
  - *Often used for off-street operations*
  - *Buses pull in at a slight angle, parallel to road & in direction of traffic*
  - *Reduces length of curb space needed per bus*

Conceptual Layouts



- **Angle berths**
  - *Area required for 12 berths: 1.1 acres*
  - *Buses pull in at a significant angle to road & in direction of traffic*
  - *Reduces length of curb space needed per bus*
  - *Requires buses to back out of berths to exit*
  - *Most appropriate when buses stop for more than a few minutes*

Potential Sites for Co-located Transit Hub



1. Danbury Rail Museum Parking Lot

- Size: 0.3 acres
- Opportunity
  - *Owned by City of Danbury*
- Challenge
  - *Small parcel size*
  - *Distant from Danbury RR station*
  - *High number of auto accidents in vicinity of site*
  - *Displaces rail museum parking*

2. Danbury Rail Museum Yard

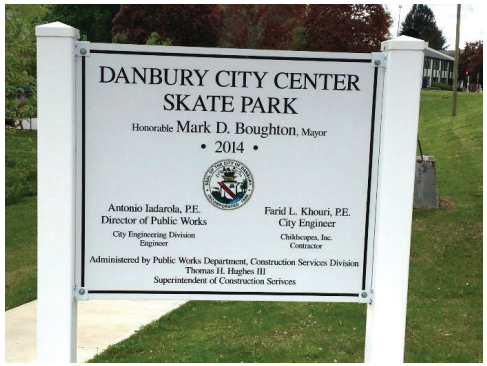
- Size: 1.5+ acres
- Opportunity
  - *Owned by State of Connecticut*
  - *Compatible with existing land uses*
- Challenge
  - *Accessible via NB Patriot Drive only*
  - *Requires crossing of railroad tracks (buses, autos, peds, & bikes)*
  - *Potential grade separated crossing required*
  - *Impacts to rail museum operation*
  - *Requires removal of rail tracks*

3. Danbury Rail Station Parking Lot

- **Size: 1.3 acres**
- **Opportunity**
  - *Close to railroad station & platforms*
  - *Owned by State of Connecticut*
- **Challenges**
  - *Buses need to cross railroad tracks to enter/exit site*
  - *At-grade crossing gate when down may impact bus operations & cause traffic congestion*
  - *To avoid impacts to bus operations & to adjacent roads requires extensive coordination of Metro-North train & HARTransit bus arrivals & departures*
  - *Displaces commuter parking*

4. Skate Park Site

- Size: 0.8 acres
- Opportunity
  - *Owned by City of Danbury*
- Challenge
  - *Small parcel size*
  - *Accessible via NB Patriot Drive only*
  - *High number of auto accidents adjacent to the site*
  - *Displaces existing park/recreational use*

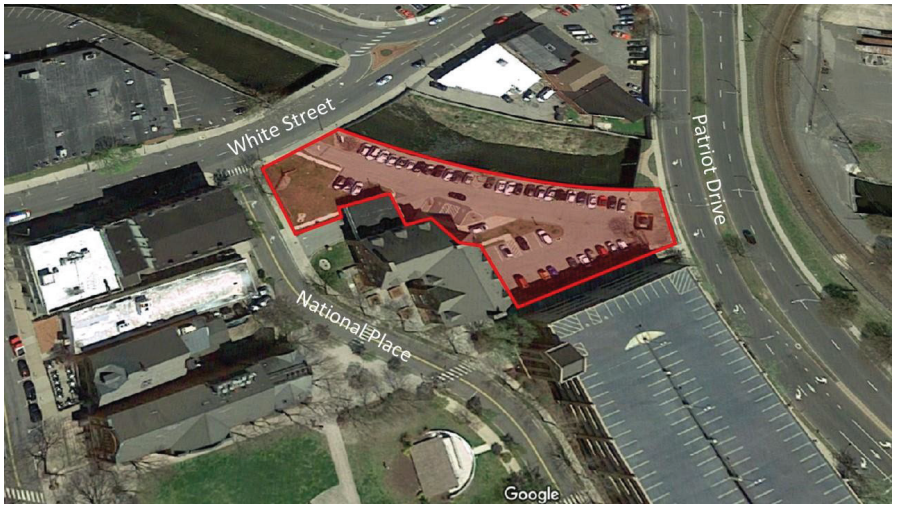


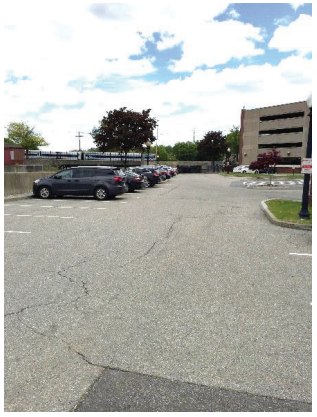
5. Pahquioque Avenue Site

- **Size: 4.7 acres**
- **Opportunity**
  - *Large parcel size*
  - *Owned by Eversource*
  - *Site generally clear of obstacles*
- **Challenges**
  - *Important to minimize bus traffic on Pahquioque Avenue*
  - *Grade difference between roadway & site*
  - *Requires up & over pedestrian connection to rail station*
  - *Noise & air quality impacts to adjacent residential area*
  - *Displaces storage space for utility company*

6. Paul Mitchell School Parking Lot Site

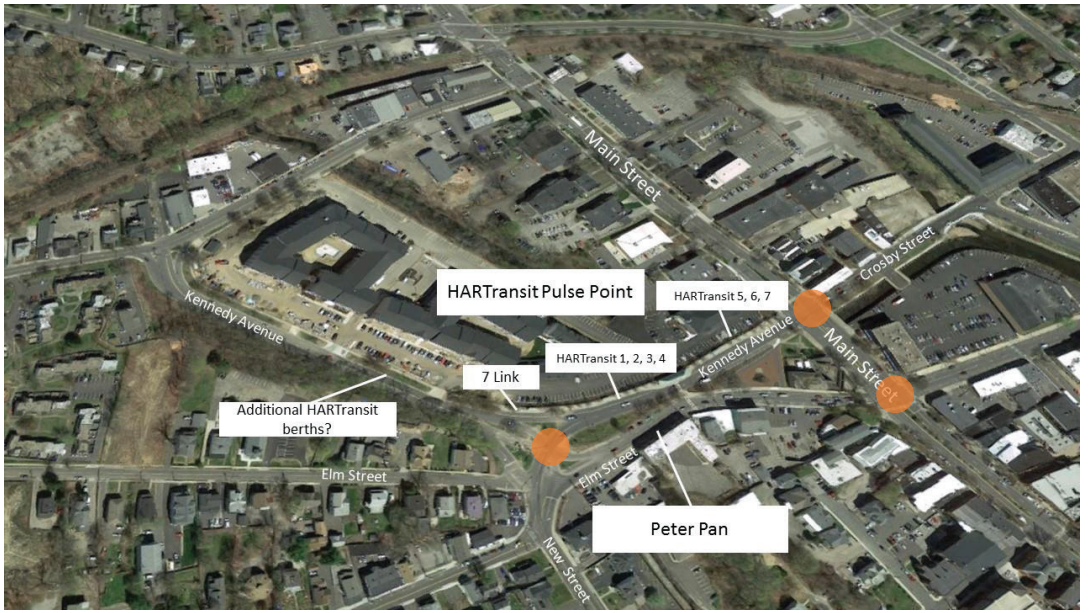
- Size: 0.6 acres
- Opportunity
  - *Close to rail station*
  - *Building is currently for sale*
- Challenges
  - *Privately owned*
  - *Small parcel size*
  - *Displaces parking for adjoining building*





Existing HARTransit & Peter Pan Bus Hub

- **Opportunity**
  - *No change to existing bus operation*
  - *Opportunity to improve existing bus facilities*
- **Challenges**
  - *Distant from Metro-North rail station*
  - *Limited opportunities to accommodate future development*
  - *Limited/no additional bus berth capacity along Kennedy Avenue*
  - *Cannot accommodate other desired HARTransit improvements (breakdown/maintenance berth, staging area for supervisor vehicles)*
  - *3 intersections used by bus routes have high numbers of accidents*



Site Screening

- **Approach**
  - *Qualitative assessment*
- **Evaluation Criteria**
  - *Site/Location*
    - Ability to meet existing & future HARTransit & Peter Pan operational needs
    - Ownership
    - Proximity to Danbury Rail Station
    - Proximity to the TOD opportunities/Downtown
  - *Transportation*
    - Impact on bus operations
    - Accessibility (bus, auto, pedestrian)
    - Automobile accident history
    - Parking supply

Preliminary Sites Screening

- **Evaluation Categories/Criteria**
  - *Environmental*
    - Air Quality/Noise
    - Community (environmental justice)
    - Land use compatibility
    - Displacement
  - *Constructability*

Recommendations and Next Steps

- **Sites to advance for further analysis**
  - *Pahquioque Avenue site – combined with Skate Park site if this offers layout advantages*
  - *Existing Pulse Point/Peter Pan Bus station*
- **Next steps**
  - *Conceptual site plans*
  - *Bus routings & running times*
  - *Traffic evaluation*
  - *Conceptual capital & operating costs*

DOWNTOWN DANBURY

TRANSIT-ORIENTED DEVELOPMENT STUDY

CITY OF DANBURY, CT | JANUARY 2019

APPENDIX C

TRANSIT CENTER CO-LOCATION ANALYSIS—POTENTIAL FUNDING SOURCES, CONCEPTUAL SITE LAYOUT, CONCEPTUAL COST ESTIMATE

Memorandum

To: Ben Carlson, Goody Clancy

Date: December 15, 2017

Project #: 25923.00

From: VHB

Re: Danbury TOD Study
Potential Funding Sources for New Co-located Bus Facility

There are several funding mechanisms that may be pursued to secure funding and financing related to the construction of a new co-located bus facility in Downtown Danbury, CT. These approaches include applying for various federal funding programs, undertaking joint development projects with private sector participation (i.e. public-private partnerships), and issuance of revenue bonds. Each are summarized in this memorandum.

Federal Grant Programs

In 2015, the Fixing America's Surface Transportation (FAST) Act was signed into law. The Act provides transit funding through fiscal year 2020. The FAST Act re-authorized Federal Transit Administration (FTA) programs for improving mobility, increases safety, and streamlines construction and acquisition of capital projects. FTA provides annual formula grants to transit agencies as well as discretionary funding through competitive processes. The federal funding programs that may be considered for a bus facility under the Danbury TOD Project include:

Bus & Bus Facilities Infrastructure Investment Program (49 U.S.C. 5339)

The Bus & Bus Facilities Infrastructure Investment Program (49 U.S.C. 5339) makes federal resources available to states and direct recipients to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities including technological changes or innovations to modify low or no emission vehicles or facilities. It is comprised of two components: a formula program and a discretionary program.

- Buses and Bus Facilities Formula Program - 49 U.S.C. 5339(a)

The formula program provides funding to states and transit agencies through a statutory formula to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities. Eligible recipients include fixed route transit operators, and state and local government entities. The maximum federal share is 80% of the net capital project cost. The program's federal share may exceed 80% for costs related to the Americans with Disabilities Act (ADA), Clean Air Act (CAA), and bicycle amenities. The funds are available for three years after the fiscal year in which the amount was apportioned.

- Bus and Bus Facilities Discretionary Program - 49 U.S.C. 5339(b)

This discretionary program provides funding through a competitive allocation process to states and transit agencies seeking to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities. The competitive allocation provides funding for major improvements to bus transit systems that would not be achievable through formula allocations.

The purpose of the program is to improve the condition of the public transportation bus fleets, expand transportation access to employment, educational, and healthcare facilities, and to improve mobility options in rural and urban areas throughout the country. In accordance with the statutory requirement that FTA must "consider the age and condition of buses, bus fleets, related equipment, and bus-related facilities". In its evaluation, the FTA prioritizes projects that demonstrate how they will address significant repair and maintenance needs, improve the safety of transit systems, deploy connective projects that include advanced technologies to connect bus systems with other networks, and support the creation of ladders of opportunity.

Eligible recipients include designated recipients that operate fixed route bus service or that allocate funding to fixed route bus operators; state or local governmental entities.

The Bridgeport Transportation Center, constructed in 2008, was funded in part through a $34.6 million grant under the Bus and Bus Facilities Discretionary Program.

Urbanized Area Formula Grants – 49 USC 5307:

Under this program, formula funding is provided to public transit systems in Urbanized Areas (UZA) for public transportation capital, planning, job access and reverse commute projects, as well as operating expenses under specific circumstances. Governors, responsible local officials and publicly owned operators of transit services designates the recipient of funds. For urbanized areas with populations of less than 200,000, the governor or governor's designee acts as the designated recipient for urbanized areas. Funding is apportioned on the basis of legislative formulas. For areas of 50,000 to 199,999 in population, the formula is based on population and population density.

Eligible activities include:

- Planning, engineering, design and evaluation of transit projects and other technical transportation-related studies;
- Capital investments in bus and bus-related activities such as replacement, overhaul and rebuilding of buses, crime prevention and security equipment, and construction of maintenance and passenger facilities;
- Capital investments in new and existing fixed-guideway systems; and
- All preventative maintenance and some Americans with Disabilities Act paratransit complementary costs are considered capital costs.
- For urbanized areas with populations less than 200,000, operating assistance is an eligible expense.

The grant funding is not to exceed 80%. However, it may increase to 90% for the cost of vehicle-related equipment attributable to compliance with the ADA and the CAA.

Surface Transportation Block Grant Program (STBG) – 23 USC 133:

The STBG is administered by the Federal Highway Administration and funding is apportioned to each state based on a formula percentage specified by law. It provides funding for projects that preserve and improve the performance

of the transportation system, including highway, transit, intercity, bus, bicycle and pedestrian projects. The Program has one of the most flexible eligibility requirements among all Federal-aid highway funding programs. STBG is an extension of the Surface Transportation Program from prior years.

Federal Flexible Funding Programs

Congestion Mitigation and Air Quality Program (CMAQ) – 23 USC 149:

The overall goal of CMAQ is to improve air quality. The CMAQ program provides funding to areas in nonattainment or maintenance for ozone, carbon monoxide, and/or particulate matter. Funds may be used for any transit capital expenditures otherwise eligible for FTA funding if they have an air quality benefit. The CMAQ solicitation is coordinated through the Metropolitan Planning Organization, such as the Western Connecticut Council of Governments, every two years. Generally, federal CMAQ funding covers 80% of project costs. However, projects can qualify for 100% funding. Design, right-of-way acquisition, construction engineering, and operating cost, if applicable, can be considered for funding.

Connecticut receives CMAQ funding for areas in the State that do not meet National Ambient Air Quality Standards (NAAQS) or for infrastructure maintenance to reduce ozone impacts, carbon monoxide, and/or particulate matter. The City of Danbury is designated as a non-attainment area for ground-level ozone standards and is designated as an attainment area for Particulate Matter (PM) 2.5 by the U.S. Environmental Protection Agency.

Transportation Investment Generating Economic Recovery (TIGER) Program:

The TIGER Program provides discretionary funding for innovative, multi-modal and multi-jurisdictional transportation projects that provide significant safety, economic and environmental benefits to a metropolitan area, region, or nation. Eligible applicants are state, local and tribal governments, including transit agencies, port authorities, Metropolitan Planning Organizations, and other political subdivisions of State and local governments. The following lists a description of eligible projects:

- Road or bridge projects eligible under title 23, United States Code;
- Public transportation projects eligible under United States Code Title 49 Chapter 53;
- Passenger and freight rail transportation projects;
- Port infrastructure investments (including inland port infrastructure and land ports of entry); and
- Intermodal projects.

Funding requests must be between $5 million to $25 million. Matching funds are recommended. Historically, TIGER grants have received co-investment of $3.6 for every TIGER dollar invested (including private and philanthropic funds).

In 2011, the City of Stamford was awarded a $10,500,000 grant for its Stamford Intermodal Access project. The project sought to construct two pedestrian bridges over the Stamford train station tracks, pedestrian ramps, and train platform weather shelters as well as enclosing an outdoor area to increase station capacity.

In 2012, the City of Hartford was awarded a $10,000,000 grant for the Hartford Intermodal Transportation Project. The project would redesign local streets to expand bus service to the city's commercial center for commuters who travel through Union Station daily. In addition to improved bus stops, crosswalks and bike paths, the project would also restore flowing water in Bushnell Park North - all part of Hartford's "One City, One Plan" initiative.

In 2015, the Connecticut Department of Transportation was awarded $10,000,000 in funding for the Barnum Station Project. The project will construct a new commuter rail station serving Metro-North Railroad on the east side of Bridgeport. The project includes widening the existing tracks to accommodate two center island platforms, constructing an underpass tunnel to provide platforms access, and modifying roadways.

Joint Development

Joint development projects and private sector participation is promoted by the FTA. This approach integrates transit improvements with commercial, residential, and mixed-use development within proximity to the transit project investment. Joint development may involve a public-private partnership (P3) with coordination between transit agencies and developers to improve land owned by the transit agency or related to a transit improvement. Joint development is a form of value capture, as a transit agency creates value for the surrounding community and uses some of the developer funds generated from the benefits of the infrastructure investment to help finance the transit project.

FTA-assisted joint development may utilize financial assistance from FTA through:

- New grant funding through one of FTA's planning or capital grants programs
- Development of property or air rights previously acquired with FTA grant funding

In October 2011, the State of Connecticut passed Public-Private Partnership (P3) legislation. Connecticut General Statutes Section 4-255 authorizes the state to enter into Public-Private Partnerships for the design, development, operation or maintenance of the following new or existing project types:

- Early childcare, educational, health, or housing facilities; and,
- Transportation systems, including ports, transit-oriented development and related infrastructure

State agencies are permitted to submit PPP projects for approval by the Governor, but first must complete a series of analyses including projected demand, economic and social impact, cost-benefit analysis, and the publicly financed alternatives.

An example of a successful P3 project in the region is the Hudson-Bergen light rail transit system. NJ TRANSIT in partnership with 21st Century Rail Corporation (URS Washington Division, Itochu Rail Car and Kinkisharyo USA) entered into a design-build-operate-maintain (DBOM) 15-year fixed price contract in 1996 to design and construct 9.5-mile Minimum Operating Segment with a guaranteed completion date, provide a fleet of light rail vehicles, and operate and maintain the system for 15 years. The contract was later renegotiated to include subsequent extensions.

Revenue Bonds

Revenue bonds are another source of funding for transit projects and can be issued by the transit agency, state, or local government. Most transit agencies are authorized to issue debt by statue or ordinance with a variety of revenue sources, such as sales tax, anticipated grant receipts, and property taxes.

Transit agencies generally pursue two types of revenue bonds: (1) Fare Box Revenue Bonds and (2) Grant Anticipation Notes, which can be used for the local match of a federal grant program. Farebox revenue bonds involve the issuance of debt by a transit agency, secured by pledging revenues collected from transit system operation. However, farebox revenue bonds are rare because most transit systems operate at substantial deficits. Grant Anticipation Notes are issued on the expectation of receiving grant funds from the federal government. The notes are payable from the grant funds, when received.

Collectively, these two bond approaches were made possible by the prior Transportation Equity Act for the 21st Century (TEA-21) legislation, which authorized use of farebox revenues and anticipated grant receipts as collateral for revenue bonds. To receive a bond, a transit agency must show that another source of funds is available for the agency's operating expenses.

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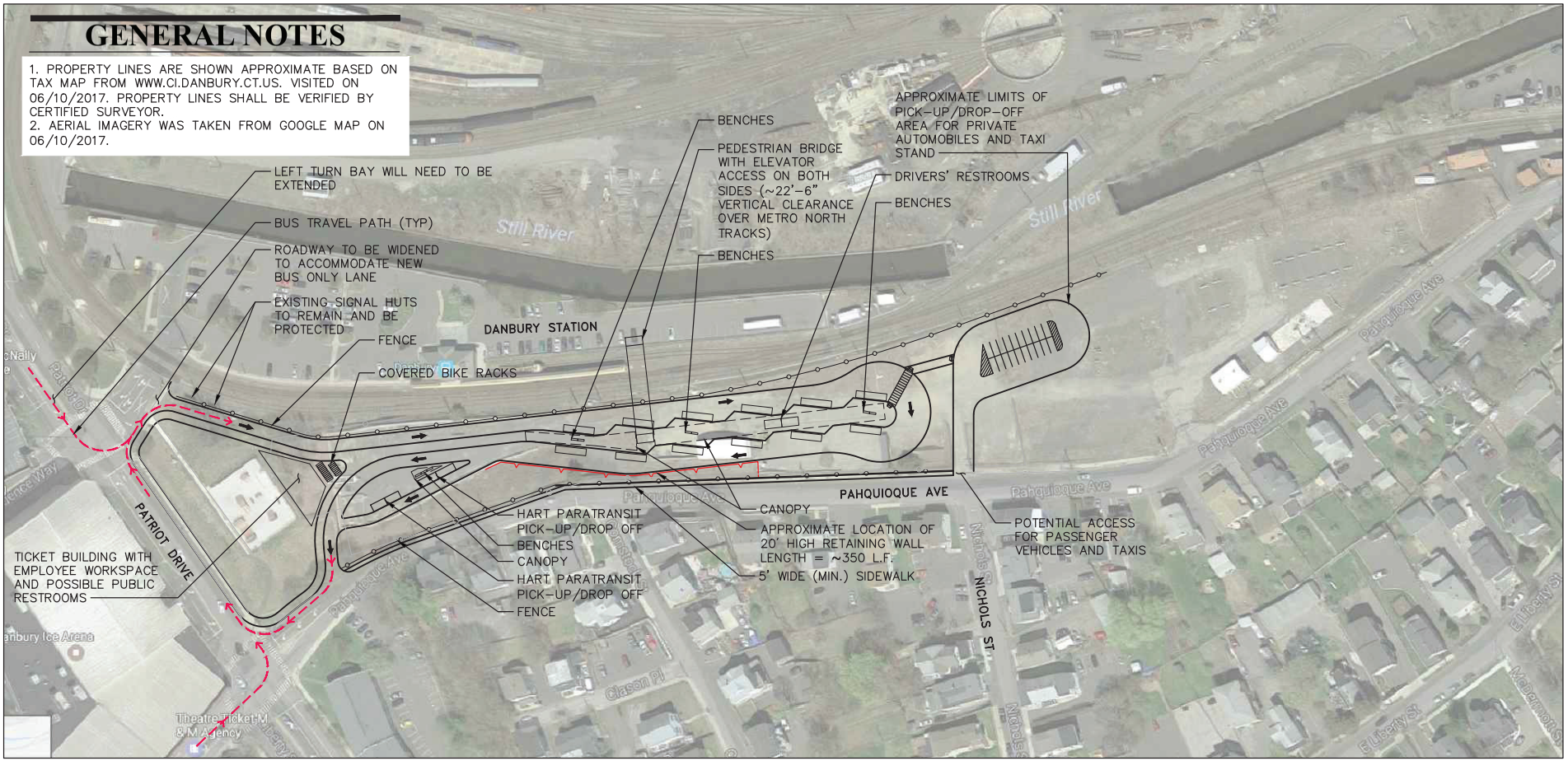


Co-location Plan for Transit Hub

Preferred Alternative

Downtown Danbury Transit-Oriented Development Study

Source:
Prepared for:
Date: **CONCEPTUAL SITE PLAN 01/11/2018**

Entry via Metro North Station Driveway
Exit via Pahquioque Avenue

LEGEND	
- - - -	DIRECTION OF BUS ROUTES ENTERING AND EXITING THE TRANSIT HUB

0 60 120 240 Feet

vhb

ORDER OF MAGNITUDE COST ESTIMATE
Co-location Plan for Transit Hub - Danbury, CT
Prepared by VHB

Anticipated Year of Expenditure (mid-point of construction):	**Sept. 2021**	Inflation (%)	**3.5**
Base Year (cost is based on expenditure in this year):	**Jan. 2018**		
Phase of Development:	**Programming**		
	Estimate Date:		**01/11/2018**

DETAIL COST BREAKDOWN

Description	Qty	UOM		Unit Price		Amount
INFRASTRUCTURE						
Site Work						
Items list to be further defined during preliminary and final design						
Asphalt Pavement (4" HMA, 4" HMA, 12" Subbase)	44,500	SF	$	10	$	445,000
Concrete Sidewalk	19,400	SF	$	15	$	291,000
Concrete Curb	4,100	LF	$	25	$	103,000
Landscaping (seeding & topsoil)	61,200	SF	$	1	$	77,000
Retaining Wall	8,400	SF	$	150	$	1,260,000
Site Demolition (unclassified excavation, & fence removal)	1	LS	$	330,000	$	330,000
Site Drainage	15	%		of site work	$	376,000
Utilities	40	%		of site work	$	1,002,000
Subtotal-Site Work Items					**$**	**3,884,000**
Site Amenities						
Items list to be further defined during preliminary and final design						
Bench	9	EA	$	1,500	$	14,000
Canopy	6,900	SF	$	104	$	718,000
Bike Racks	20	EA	$	700	$	14,000
Chain Link Fence	1,900	LF	$	20	$	38,000
Driver's Restrooms	400	SF	$	250	$	100,000
Ticket Building	1,500	SF	$	450	$	675,000
Pedestrian Bridge (includes stair/elevator towers)	1	LS	$	3,750,000	$	3,750,000
Modifications Pavement at Danbury Station for Pedestrian Bridge	1,000	SF	$	10	$	10,000
Utilities	20	%		of site amenities	$	1,064,000
Subtotal-Site Amenities Items					**$**	**6,383,000**
Pick-Up/Drop-Off Area						
Items list to be further defined during preliminary and final design						
Asphalt Pavement	15,000	SF	$	10	$	150,000
Concrete Sidewalk	600	SF	$	15	$	9,000
Concrete Curb	110	LF	$	25	$	3,000
Site Demolition (unclassified excavation)	1	LS	$	27,800	$	28,000
Utilities	40	%		of site work	$	76,000
Subtotal-Pick-Up/Drop-Off Items					**$**	**266,000**
Roadway Improvements						
Roadway Widening for Bus Lane at Metro-North RR Station Driveway	100	LF	$	310	$	31,000
Off-Site Sidewalks on Pahquioque Avenue						
- Curb Sidewalk	4,500	SF	$	15	$	68,000
- Concrete Curb	700		$	25	$	18,000
- Asphalt Pavement	2,300	SF	$	10	$	23,000
Left Turn Bay Extension on Patriot Drive (for standard 12' lane width)	100	LF	$	440	$	44,000
Signal Modifications at Patriot Drive & Entrance	1	EA	$	50,000	$	50,000
Modifications to Existing Drainage System at Patriot Drive & Entrance and at Left Turn Bay	2	EA	$	50,000	$	100,000
Utilities	40	%		of roadway improvements	$	134,000
CTDOT Standard Items and Unit Prices to be added during Final Design						
Subtotal-Roadway Improvements					**$**	**468,000**
				TOTAL INFRASTRUCTURE COST	**$**	**11,001,000**
ALLOWANCES, CONTINGENCIES, AND ESCALATION						
Allowances and contingencies are based on the CTDOT 2017 Cost Estimating Guidelines						
Allowances						
Minor Item Allowance	30.00%	%		of infrastructure	$	3,300,000
Recurring Lump Sum Items (CTDOT Standard)						
Clearing & Grubbing	3.00%	%		of infrastructure	$	330,000
Maintenance and Protection of Traffic	3.00%	%		of infrastructure	$	429,000
Mobilization & Project Closeout	6.50%	%		of infrastructure	$	930,000
Construction Staking	1.00%	%		of infrastructure	$	143,000
Subtotal Recurring Lump Sum Items (CTDOT Standard)					**$**	**1,832,000**
Base Estimate - Infrastructure & Allowance					**$**	**16,133,000**
Contingency (risk contingency)	30.00%	%		of base estimate	$	4,840,000
No additional contingency has been added for Hazardous waste handling, disposal, or remediation. Further subsurface investigation is required. Does not include property acquisition or Metro-North Force Account						
Subtotal - Base Estimate w/Contingency					**$**	**20,973,000**

DETAIL COST BREAKDOWN

Description	Qty	UOM	Unit Price		Amount
Soft Costs					
Professional Services	8.00%	%	of infrastructure	$	1,291,000
Incidentals	10.00%	%	of infrastructure	$	1,613,000
Subtotal - Soft Costs				**$**	**2,904,000**
Escalation					
Escalation calculated at 3.5% per year (simple not compound). Escalation estimated from January 2018 to September 2021 (projected mid-point of Construction)					$3,134,000
TOTAL ESTIMATED CONTRUCTION COST				**$**	**27,011,000**

DOWNTOWN DANBURY

TRANSIT-ORIENTED DEVELOPMENT STUDY

CITY OF DANBURY, CT | JANUARY 2019

APPENDIX D

TRANSIT CENTER CO-LOCATION ANALYSIS – SOCIETAL IMPACT ANALYSIS AND PROPOSED BUS REROUTING

Memorandum

To: Ben Carlson – Goody Clancy

Date: January 8, 2018

Project #: 25923.00

From: Abigail Rudow, AICP - VHB

Re: Danbury TOD Study – Societal Impact Analysis

Introduction

VHB prepared an analysis to determine if the proposed relocation of the HARTransit Pulse Point (the "Pulse Point") and Peter Pan Bus Station to the Pahquioque Avenue/Skate Park site adjacent to the Metro-North Railroad Station (the "preferred relocation site") would impact mobility opportunities for elderly, disabled, isolated, and economically disadvantaged populations in the City of Danbury. The analysis examines the conformance of the proposed relocation to the provisions of Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, and national origin in programs and activities that receive federal financial assistance, and with Environmental Justice requirements outlined in Executive Order 12898 to identify and address disproportionally high and adverse human health or environmental effects, including social and economic effects, of programs or policies on minority and low income populations.

VHB used U.S. Census data as well as estimated changes in travel distances and ease of multi-modal transfers analyzed as part of other tasks for the project as the basis for these findings. Given the proximity of the existing Pulse Point and Peter Pan Bus Station to the preferred relocation site, it is assumed for the purposes of this analysis that bus service schedules would not change significantly as a result of the project, and consequently, that potential changes in terms of accessibility and mobility opportunities would primarily affect neighboring communities of the existing and preferred sites as opposed to bus riders. Therefore, the neighboring community is the focus of this analysis. The analysis presented below is based on the best available information, and may require or be subject to more detailed analyses as the project is further defined. As shown, based on the information available, the proposed relocation would have negligible impacts in terms of accessibility to the Pulse Point and would provide overall benefits in terms of mobility opportunities for the populations analyzed.

Data and Methodology

Given the availability of census data at different geographic units, two geographic study areas were analyzed as part of this analysis: the census block groups ("Study Area Block Groups") and census tracts ("Study Area Census Tracts") with a significant portion of their land area located within a half-mile radius of the existing Pulse Point and the preferred relocation site, as shown in the attached figure in Appendix A. A half-mile radius represents an approximate ten-minute walking radius, and is considered the area to which the existing and proposed bus facilities are most accessible for the purposes of this analysis. The Study Area Block Groups include census tract (CT) 2101, block groups (BGs) 1, 2 and 3, CT 2102, BGs 1, 2 and 3, CT 2106, BG 4, and CT 2107.01, BGs 1 and 2. The Study Area Census Tracts include CTs 2101, 2102 and 2107.01. CT 2106 contains a significant portion of its population outside of the half-mile radius and was therefore excluded from the census tract level analysis.

Detailed demographic data for the Study Area Block Groups and Study Area Census Tracts is provided in Table 1 below, including data on total population, the elderly population (defined as age 65 or older), the disabled population, race/ethnicity, limited English proficiency (LEP) and poverty level. For comparison, data for the aggregated Study Area and the City of Danbury is provided. Based on data availability, population, age, disability, LEP and poverty data is from the 2011-2015 American Community Survey 5-Year Estimates and race and ethnicity data is from the 2010 U.S.

Census. Data on the disabled population is presented at the census tract level (for the Study Area Census Tracts); all other data is provided at the block group level (for the Study Area Block Groups).

The location of environmental justice communities was determined per the guidelines set forth in the Western Connecticut Council of Governments (WestCOG) *Title VI Civil Rights and Public Participation Plan (*the "WestCOG Plan"), which defines an environmental justice community as a census tract that meets the following three criteria: percent minority population over 23 percent; over 6.7 percent of population below the poverty level; and a per capita income below $44,086. According to the WestCOG Plan, all of the Study Area Census Tracts meet the criteria for an environmental justice community (it should be noted that while CT 2106 is not included in the analysis as a Study Area Census Tract, it also meets the criteria for an environmental justice community according to the WestCOG Plan). To further refine the analysis, each of the block groups were also analyzed per Section 22a-20a of the Connecticut General Statutes, which defines an environmental justice community as a "census block group for which 30 percent or more of the population consists of low income persons who are not institutionalized and have an income below 200 percent of the federal poverty level." Therefore, poverty level data is presented as the percentage of the population below two hundred percent of the poverty level.

The WestCOG Plan also identifies Census Tracts that meet the following LEP thresholds: 1,000 people speaking an identified non-English language who have limited English proficiency or 5 percent or more of the total population speaking an identified non-English language who have limited English proficiency, whichever is less. The term Limited English Proficient refers to any person age 5 and older who reported speaking English less than "very well," as classified by the U.S. Census Bureau. According to the WestCOG Plan, all of the Study Area Census Tracts meet the stated LEP standards for Spanish and Portuguese speakers.

The WestCOG Plan considers environmental justice requirements to be met if the population groups of concern in an environmental justice area benefits from a transportation project in the same manner as the general population, and that no group is singled out for inadvertent receipt of adverse impacts of a proposed project. To assess this, demographic data of the residents within the Study Areas, who as mentioned above are likely to be most affected by the proposed relocation of the Pulse Point, is analyzed and compared with the City as a whole.

Study Area Demographics

Compared with the City of Danbury, the Study Area Block Groups have a higher percentage of low-income residents and is more diverse in terms of racial and ethnic makeup. The Study Area Block Groups also have a higher percentage of LEP residents than the City. However, the City has a higher percentage of elderly residents than the Study Area Block Groups, and based on the census tract level disability analysis, a higher percentage of disabled residents than the Study Area Census Tracts.

As shown in Table 1 and mentioned above, all of the Study Area Census Tracts and Block Groups qualify as environmental justice communities, both meeting the WestCOG Plan environmental justice criterion and surpassing the 30 percent threshold per Section 22a-20a of the General Statutes. Compared with the City of Danbury, of which 28.2 percent of the population has an income below 200 percent of the poverty level, the Study Area Block Groups contains a higher percentage of low-income residents, with 49.7 percent of its population at an income below 200 percent of the poverty level. The Study Area Block Groups are also more diverse and have a higher percentage of LEP residents than the City of Danbury; 66.8 percent of the Study Area Block Groups population is minority and 27.0 percent is LEP, compared to only 26.9 percent and 12.2 percent of the City's total population, respectively. 8.2 percent of the population within the Study Area Block Groups is age 65 or older, compared with 12.6 percent of the City's total population. 8.4 percent of the population within the Study Area Census Tracts has a disability, compared with 8.9

percent of the City's total population. As mentioned above and indicated in Table 1, all of the Study Area Census Tracts meet the WestCOG Plan LEP standards for Spanish and Portuguese speakers, whereas the rate of limited English proficiency for the City is much lower.

Analysis

Transit Accessibility

As shown in the attached figure (see Appendix A), the existing Pulse Point is located on Kennedy Avenue between Main Street and New Street, approximately .35 miles from the preferred relocation site at Pahquioque Avenue and Patriot Drive. At this distance, there is a large area of overlap within the half-mile radii of both locations, and therefore a significant portion of the Study Area residents would be well-served by both the existing and proposed bus hub locations. In addition, given the demographic characteristics of the Study Area described above and presented in Table 1, on a broad level, the proposed relocation of the Pulse Point and Peter Pan Bus Station would result in moving the bus hub facility from one environmental justice community to another, as well as from one LEP community to another, and therefore would not have a significantly different impact in terms of transit accessibility overall for the populations analyzed. (Note that the new facility would be fully ADA compliant and accessible to persons with disabilities.)

However, on a more localized level, the relocation of the bus hub to the east could result in increased transit accessibility for residents that live closer to the preferred relocation site, and decreased transit accessibility for residents currently served by the existing Pulse Point. To assess whether this localized impact would have broader and disproportionately high impacts on the populations of interest, two Study Area Block Groups are compared: the western-most block group, CT 2107.01, BG 2, which is located inside the half-mile radius of the existing Pulse Point but outside the half-mile radius of the preferred relocation site (meaning the population would be located further from the preferred relocation site), and the eastern-most block group (CT 2102, BG 3), which is located outside of the half-mile radius of the existing Pulse Point but inside the half-mile radius of the preferred relocation site, meaning the population would be closer to the preferred relocation site.

Comparing these two block groups helps capture any broader societal impacts that might arise from the localized effects of the proposed relocation, namely the shifting of the Pulse Point further from some residents and closer to others. In Table 2, the demographic characteristics of these two comparison block groups are highlighted. CT 2107.01, BG 2 is shaded in red and CT 2102, BG 3 is shaded in yellow in both Table 2 below and in the attached figure in Appendix A.

As shown, compared with CT 2107.01, BG 2 (the community served by the existing Pulse Point), CT 2102, BG 3 has a lower percentage of minority and low-income residents, but a higher percentage of elderly and LEP residents. Therefore, though certain community members would be affected in terms of their distance to the preferred relocation site of the Pulse Point depending on where they live, based on the information available, the environmental justice and LEP communities of concern would benefit in the same manner as the general population, and no group is singled out for inadvertent receipt of adverse impacts.

Other Factors

As analyzed and detailed under other tasks for this project, the proposed co-location of the HARTransit Pulse Point near the Danbury Metro-North Railroad Train Station would likely have an overall positive impact on ease of both multi-modal and bus transfers within the City of Danbury. For the purposes of this analysis, it is assumed that bus service schedules would not change significantly as a result of the project (see Appendix B for Proposed Bus Rerouting

Memo and Maps), and that the new facility would be fully ADA compliant and accessible to persons with disabilities. In addition, as shown in the Appendix B maps, most bus routes still pass within one block of the current Pulse Point routing. Therefore, the relocation of the facility, which as discussed, would remain within a highly diverse and relatively low-income population compared with the City, would have overall positive impacts based on these service improvements.

On the other hand, though not analyzed quantitatively in this analysis, the rerouting of bus routes through the community surrounding the preferred relocation site could increase noise levels or change air quality conditions in that community. However, as detailed above, though there may be localized impacts from one community to another, the broader societal impacts to the populations of interest would be negligible given the demographics of the two block groups analyzed.

Conclusion

Based on the best available demographic information and analysis, there would be negligible impacts on the populations analyzed, including elderly, disabled, isolated, and economically disadvantaged populations, in terms of proximity and accessibility to the proposed bus facility. Therefore, the project would not have disproportionally high impacts on these populations. In addition, due to overall improvements in terms of ease of transfers and the fact that impacts to accessibility for the populations analyzed would be negligible, the project would meet the WestCOG Plan requirements for a transportation project to benefit an environmental justice community in the same manner as the general population, and would not adversely impact that community. The analysis presented is based on the best available information, and may require or be subject to more detailed analyses as the concept plan is further refined, however, given the information analyzed, the proposed co-location of the HARTransit Pulse Point and Peter Pan Bus Station near the Danbury Metro-North Railroad Train Station would have an overall positive societal impact considering the anticipated improvements in service.

Table 1: Study Area Census Tract and Block Group Demographic Data

Census Tract	Block Group	Total Population	Elderly (65+)	Limited English Proficiency **	Race and Ethnicity						Poverty Level	Disabled *
					White (non-Hispanic)	Black (non-Hispanic)	Asian (non-Hispanic)	Other (non-Hispanic) ***	Hispanic or Latino	Total Minority		
2101	1	1,470	6.3%	21.4%	33.0%	5.6%	4.0%	4.2%	53.3%	67.0%	46.3%	9.0%
	2	1,254	8.0%	17.6%	40.5%	3.8%	2.8%	10.2%	42.7%	59.5%	51.5%	
	3	3,552	13.4%	19.1%	36.3%	6.9%	7.5%	7.4%	41.8%	63.7%	47.1%	
2102	1	1,853	9.0%	29.6%	22.6%	9.6%	3.2%	8.1%	56.5%	77.4%	53.7%	9.4%
	2	2,003	4.2%	42.8%	41.3%	6.2%	4.6%	6.6%	41.3%	58.7%	67.8%	
	3	2,978	8.2%	27.6%	40.0%	4.2%	3.3%	10.5%	42.0%	60.0%	43.1%	
2106*	4	1,542	4.8%	40.4%	35.7%	7.0%	4.2%	7.5%	45.8%	64.3%	44.9%	
2107.01	1	2,155	6.5%	26.2%	23.4%	7.9%	4.2%	7.3%	57.3%	76.6%	48.3%	6.2%
	2	1,781	7.7%	20.7%	29.1%	4.3%	4.9%	8.7%	53.0%	70.9%	54.1%	
Half-Mile Study Area		**18,588**	**8.2%**	**27.0%**	**33.2%**	**6.3%**	**4.4%**	**7.9%**	**48.2%**	**66.8%**	**49.7%**	**8.4%**
City of Danbury, CT		**83,476**	**12.6%**	**12.2%**	**54.5%**	**5.7%**	**6.0%**	**3.3%**	**29.3%**	**26.9%**	**28.2%**	**8.9%**

Note:
* Data on the disabled population is only available at the census tract level. CT 2106 contains a significant portion of its population outside the half-mile radius and is therefore excluded from the census tract level/disability analysis
** The U.S. Census definition of a person with limited English proficiency is "…a person who speaks another language other than English at home and does not speak English well or not at all"
*** Other (non-Hispanic) includes persons who identified themselves as "some other race" or "two or more races"
Environmental Justice Census Tract AND LEP Census Tract for Spanish and Portuguese Speakers, as identified by the WestCOG *Title VI Civil Rights and Public Participation Plan.* While CT 2106 is not a Study Area Census Tract, it also meets the criteria for an environmental justice community according to the WestCOG Plan.
Environmental Justice Block Group, per Section 22a-20a of the Connecticut General Statutes, definition as a census block group for which 30 percent or more of the population consists of low income persons who have an income below 200 percent of the poverty level.
Source: Population, age, disability, poverty - U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates
Race/Ethnicity - U.S. Census Bureau, 2010 Census

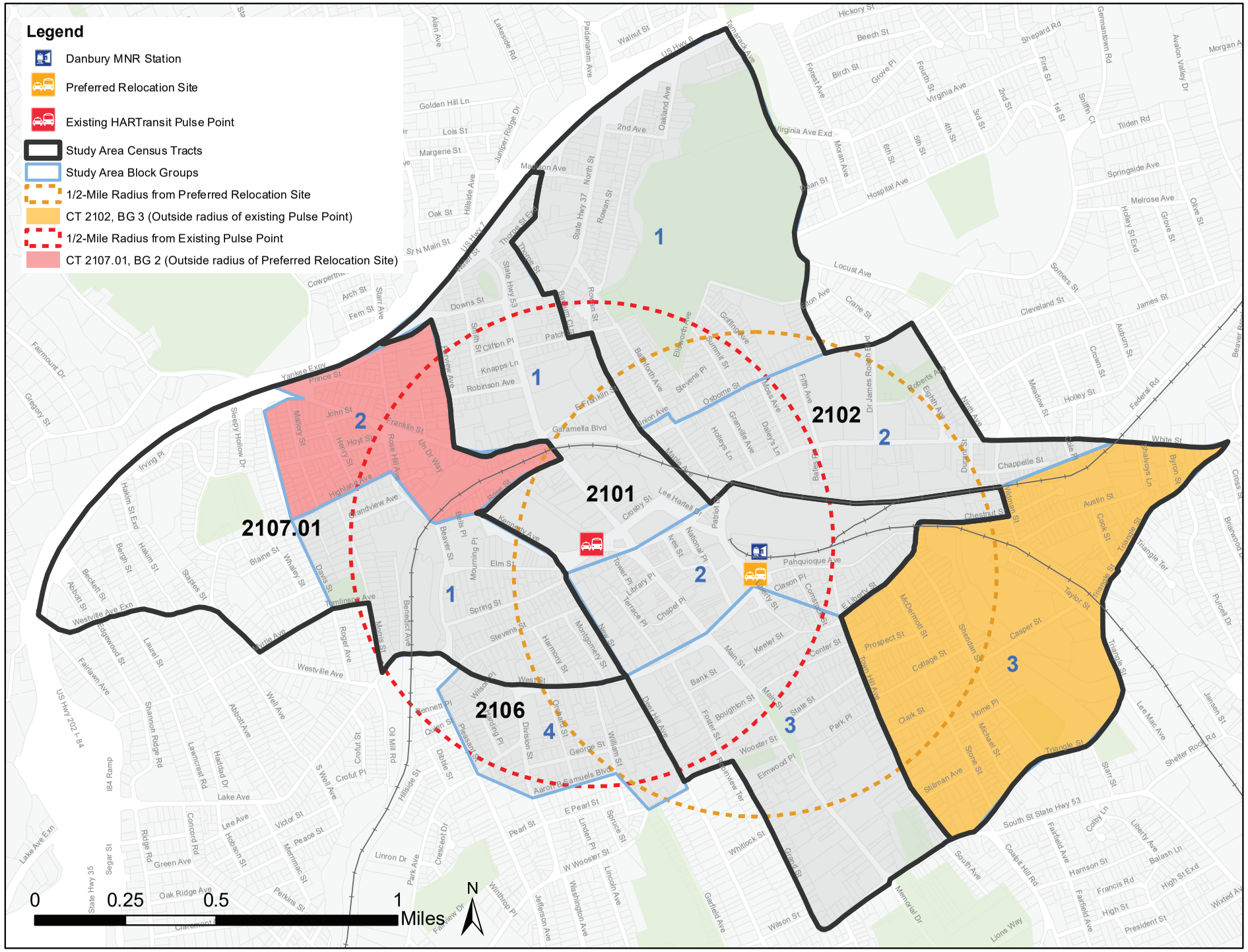
Table 2: Comparison Block Groups Demographic Data

Census Tract	Block Group	Total Population	Elderly (65+)	Limited English Proficiency **	Race and Ethnicity						Poverty Level
					White (non-Hispanic)	Black (non-Hispanic)	Asian (non-Hispanic)	Other (non-Hispanic) ***	Hispanic or Latino	Total Minority	
2102	3	2,978	8.2%	27.6%	40.0%	4.2%	3.3%	10.5%	42.0%	60.0%	43.1%
2107.01	2	1,781	7.7%	20.7%	29.1%	4.3%	4.9%	8.7%	53.0%	70.9%	54.1%

CT 2102, BG 3, eastern-most block group, located outside of the half-mile radius of the existing Pulse Point but inside the half-mile radius of the proposed relocation site (see yellow shaded block group in Appendix A figure)
CT 2107.01, BG 2, western-most block group, located inside the half-mile radius of the existing Pulse Point but outside the half-mile radius of the proposed relocation site (see red shaded block group in Appendix A figure)

Memorandum

Appendix A
Societal Impact Analysis Study Area


Legend
Danbury MNR Station
Preferred Relocation Site
Existing HARTransit Pulse Point
Study Area Census Tracts
Study Area Block Groups
1/2-Mile Radius from Preferred Relocation Site
CT 2102, BG 3 (Outside radius of existing Pulse Point)
1/2-Mile Radius from Existing Pulse Point
CT 2107.01, BG 2 (Outside radius of Preferred Relocation Site)
2107.01
2101
2102
2106
0
0.25
0.5
1
Miles
N

Memorandum

Appendix B
Proposed Bus Rerouting Memo and Maps

Memorandum

To: Ben Carlson, Goody Clancy

Date: August 25, 2017

Project #: 25923.00

From: Joseph Romeo, AICP

Re: Downtown Danbury Transit -Oriented Development Study
Co-Location Analysis of Transit Hubs
Pahquioque Avenue/Skate Park Site Bus Hub
Proposed Bus Re-routings

This memorandum provides a turn by turn description of the inbound and outbound re-routings for HARTransit buses to serve the proposed co-located bus hub at the Pahquioque Avenue/Skate Park site. The proposed bus re-routings are limited to the Downtown Danbury area. A set of bus route maps have been developed and are attached separately.

- For the bus route maps developed, the existing inbound routings to serve existing Pulse Point on Kennedy Avenue and outbound routings in Downtown Danbury are shown as solid lines.
- The proposed inbound and outbound re-routings in Downtown Danbury to serve proposed new Pulse Point at the Pahquioque Avenue/Skate Park site are shown as dashed lines.
- Entry and egress to Pahquioque Avenue/Skate Park site as shown on the maps is representational only.
- Three alternative conceptual layouts for the co-located bus hub at the Pahquioque Avenue/Skate Park site with various entry and egress points have been developed.
- The in-progress conceptual layouts showing the entry/egress options and a qualitative traffic assessment will be provided separately.
- HARTransit input on the proposed bus re-routings and the conceptual layouts will be solicited prior to the next Danbury Transit-Oriented Development Study Task Force Meeting.

A description of re-routings in the inbound and outbound directions for all HARTransit bus routes is provided below and may be used as reference in reviewing the bus route maps.

HARTransit Route 1 Town Park – Hospital

Proposed Inbound Re-routing

- Assume existing inbound routing to Maple Avenue/Osborne Street
- Continue south Maple Avenue (one-way southbound)/Patriot Avenue
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point
- North on Patriot Drive/Balmforth Avenue (one-way northbound)
- Resume existing outbound routing from Balmforth Avenue/Osborne Street

HARTransit Route 2 Newtown Road – Stony Hill

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury along Town Hill Avenue/Liberty Street/Patriot Drive
- Divert from Patriot Drive to enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point
- North on Patriot Drive
- Left turn on White Street
- Right turn on Lee Hartell Drive (one-way northbound)
- Left turn on Crosby Street
- Left turn on Main Street
- Resume existing outbound routing from Main Street/White Street

HARTransit Route 3 Mill Plain Road – Brewster

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury along Elm Street to Main Street
- Continue east on White Street (one-way eastbound)
- Turn right on Patriot Drive
- South on Patriot Drive
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point
- North on Patriot Drive
- Left turn on White Street
- Right turn on Lee Hartell Drive (one-way northbound)
- Left turn on Crosby Street
- Continue to Kennedy Avenue
- Resume existing outbound routing from Kennedy Avenue/New Street

HARTransit Route 4 Brookfield - YMCA

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury to Maple Avenue/Crosby Street
- Continue south Maple Avenue (one-way southbound)/Patriot Drive
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point
- North on Patriot Drive/Balmforth Avenue (one-way northbound)
- Right turn on Osborne Street
- Resume existing outbound routing on Osborne Street

HARTransit Route 5 Main Street Danbury – Bethel Center

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury to Main Street/Liberty Street
- Turn right on Liberty Street
- Continue east on Liberty Street to Patriot Drive
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point
- North on Patriot Drive
- Left turn on White Street
- Right turn on Lee Hartell Drive (one-way northbound)
- Left turn on Crosby Street
- Left turn on Main Street
- Continue south on Main Street
- Resume existing outbound routing from Main Street/West Street

HARTransit Route 6 Danbury Mall – Lake Avenue

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury to Main Street/West Street
- Continue east on Liberty Street to Patriot Drive
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point
- North on Patriot Drive
- Left turn on White Street
- Right turn on Lee Hartell Drive (one-way northbound)
- Left turn on Crosby Street

- Continue to Kennedy Avenue
- Resume existing outbound routing from Kennedy Avenue/Main Street

HARTransit Route 7 New Milford – Route 7

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury to White Street/Patriot Drive
- Left turn on Patriot Drive
- South on Patriot Drive
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point
- North on Patriot Drive
- Right turn on White Street
- Resume existing outbound routing along White Street

HARTransit 7 Link Danbury – Norwalk

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury to Deer Hill Avenue/West Street
- Right turn on West Street
- Continue east on West Street/Liberty Street to Patriot Drive
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point
- North on Patriot Drive
- Left turn on White Street
- Right turn on Lee Hartell Drive (one-way northbound)
- Left turn on Crosby Street
- Left turn on Main Street
- South on Main Street to Elm Street
- Resume existing outbound routing along Main Street

HARTransit Loop 1 Hospital to Danbury Mall

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury to Main Street/West Street

- Continue east on Liberty Street to Patriot Drive
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point
- North on Patriot Drive
- Right turn on White Street
- Resume existing outbound routing along White Street

HARTransit Loop 2 Bethel – Newton Road

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury along White Street to Maple Avenue/Patriot Drive
- Left turn onto Patriot Drive
- South on Patriot Drive
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point
- North on Patriot Drive
- Left turn on White Street
- Right turn on Lee Hartell Drive (one-way northbound)
- Left turn on Crosby Street
- Left turn on Main Street
- Resume existing outbound routing from Main Street/Elm Street

HARTransit Loop 3 New Milford – Route 7

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury to Osborne Street/Maple Avenue
- Continue west on Garamella Boulevard
- Left turn on Main Street
- Continue south on Main Street
- Left turn on Liberty Street
- Left turn on Patriot Drive
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

- Originate at new Pulse Point

- North on Patriot Drive to White Street
- Right turn on White Street
- Left turn on Balmforth Avenue
- Right turn Osborne Street
- Resume existing outbound routing

HARTransit Danbury – Brewster Shuttle

Proposed Inbound Re-routing

- Assume existing inbound routing in Downtown Danbury to West Street/Deer Hill Avenue
- Continue east on West Street/Liberty Street to Patriot Drive
- Enter Pahquioque Avenue site and terminate at new Pulse Point

Proposed Outbound Re-routing

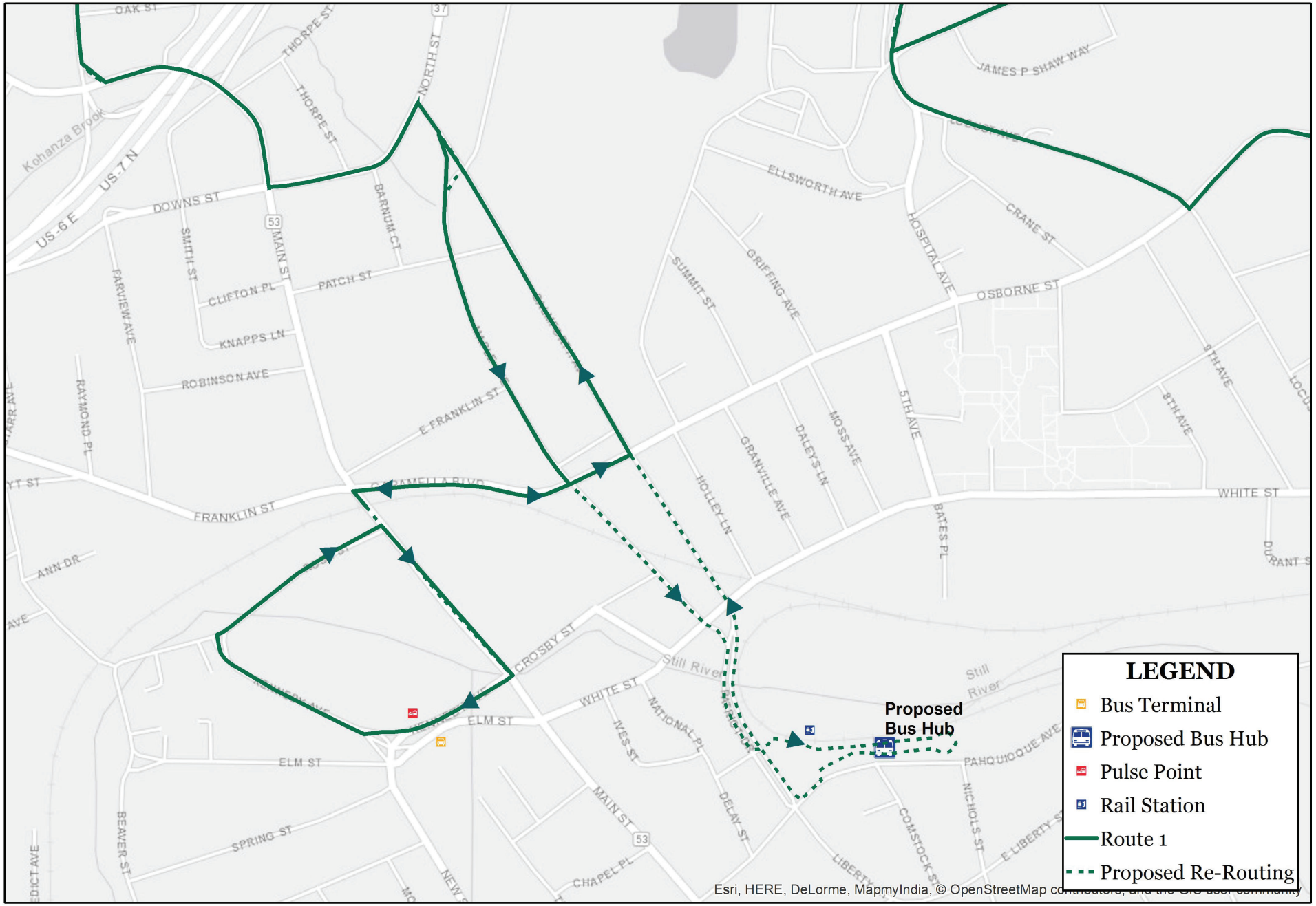
- Originate at new Pulse Point
- North on Patriot Drive
- Left turn on White Street
- Right turn on Lee Hartell Drive (one-way northbound)
- Left turn on Crosby Street
- Resume existing outbound routing from Main Street/Kennedy Avenue

The proposed re-routings would result in minor changes in bus route distances as show in the following table.

Table 1: Change in Bus Route lengths from Proposed Re-routings

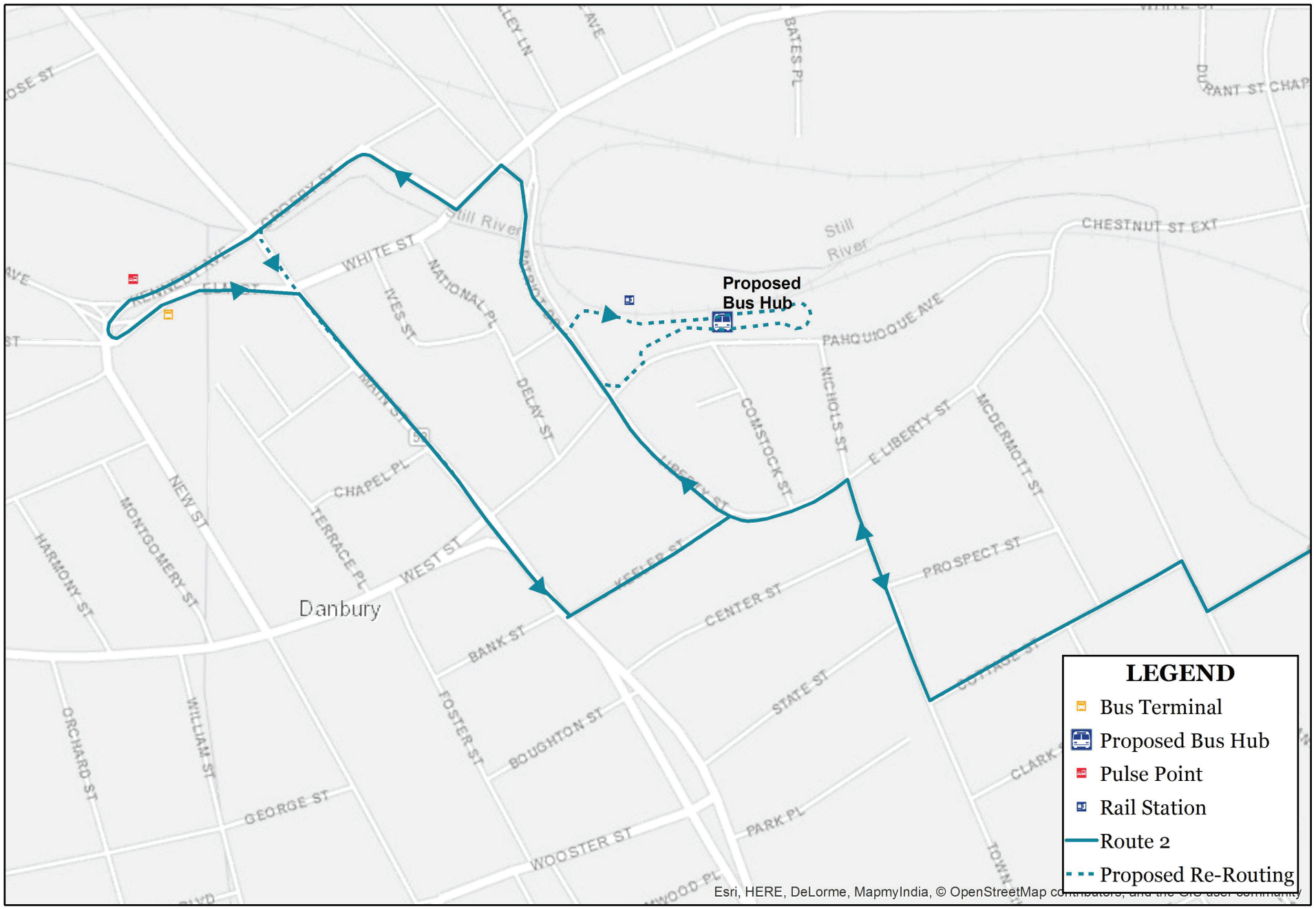
Bus Route	Exiting Route Length (miles)	Change in Route Length (miles)
1 - Town Park - Hospital	7.88	-0.48
2 - Newtown Rd - Stony Hill	5.16	-0.17
3 - Mill Plain Rd - Brewster	9.60	+0.86
4 - Brookfield - YMCA	5.89	-0.25
5 – Main St Danbury - Bethel Center	5.18	+0.32
6 – Danbury Mall – Lake Ave	5.31	+.035
7 – New Milford – Rt. 7	18.28	-0.21
7-Link – Danbury - Norwalk	24.80	-0.50
Mall –Hospital Loop	13.04	-0.41
New Milford - Danbury Loop	17.60	+0.22
Newtown Rd – Downtown Bethel Loop	13.76	+.025

An order-of-magnitude operations and maintenance cost estimate cost estimate for the incremental changes proposed resulting from the bus re-routings will be developed.



Existing Route and Proposed Re-Routing - Route 1

Danbury, CT

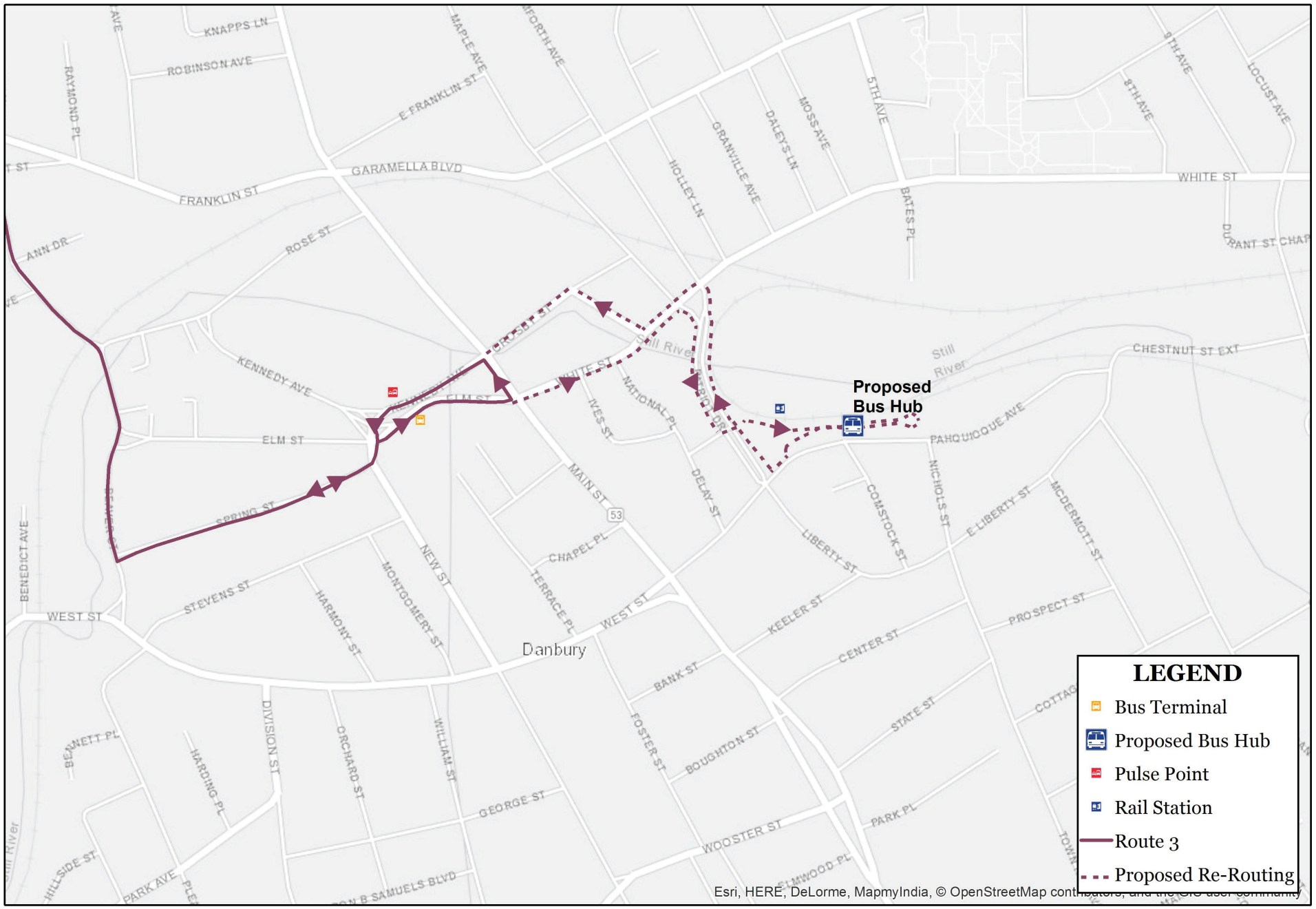


Existing Route and Proposed Re-Routing - Route 2

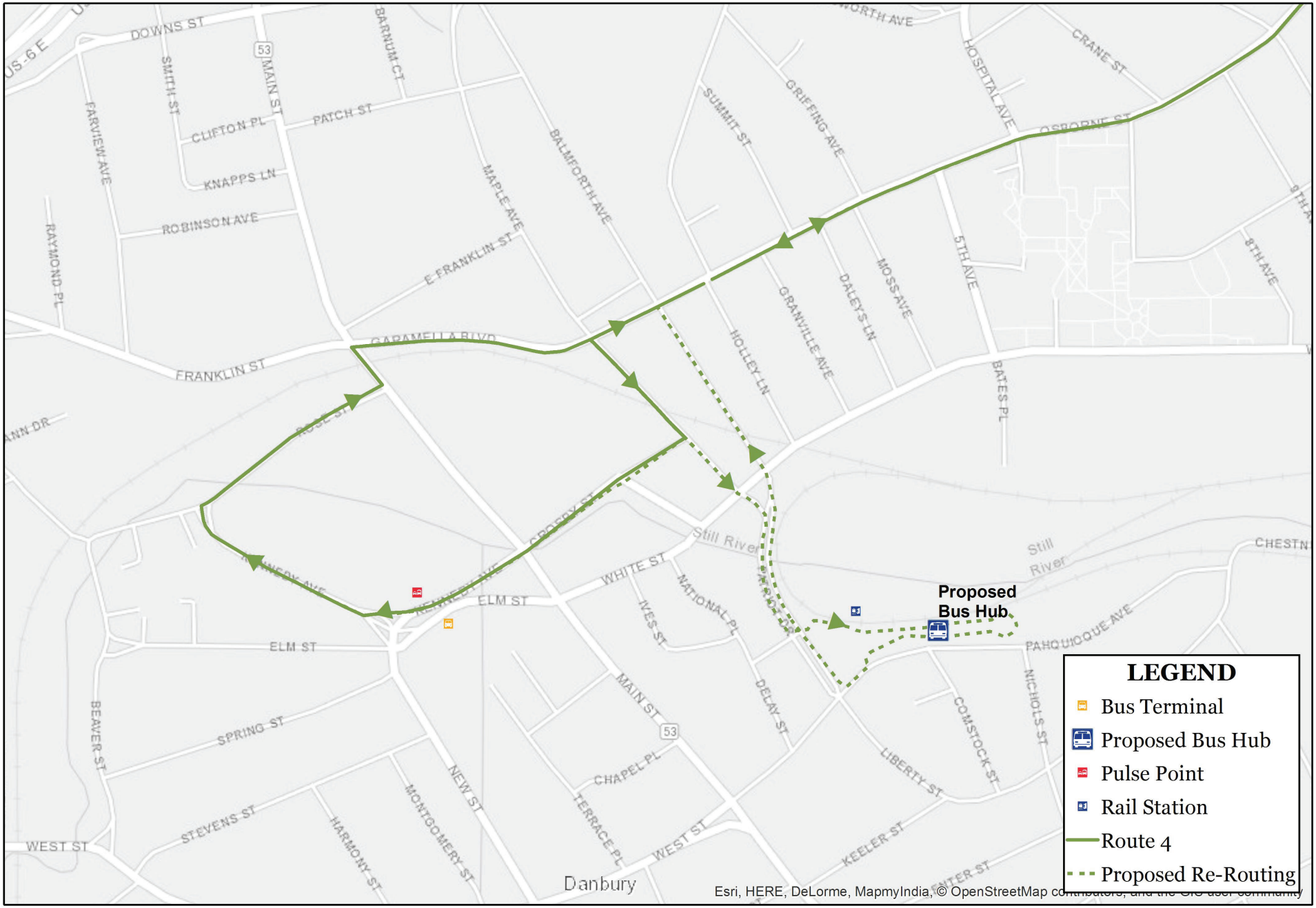
Danbury, CT

vhb

0 250 500 Feet

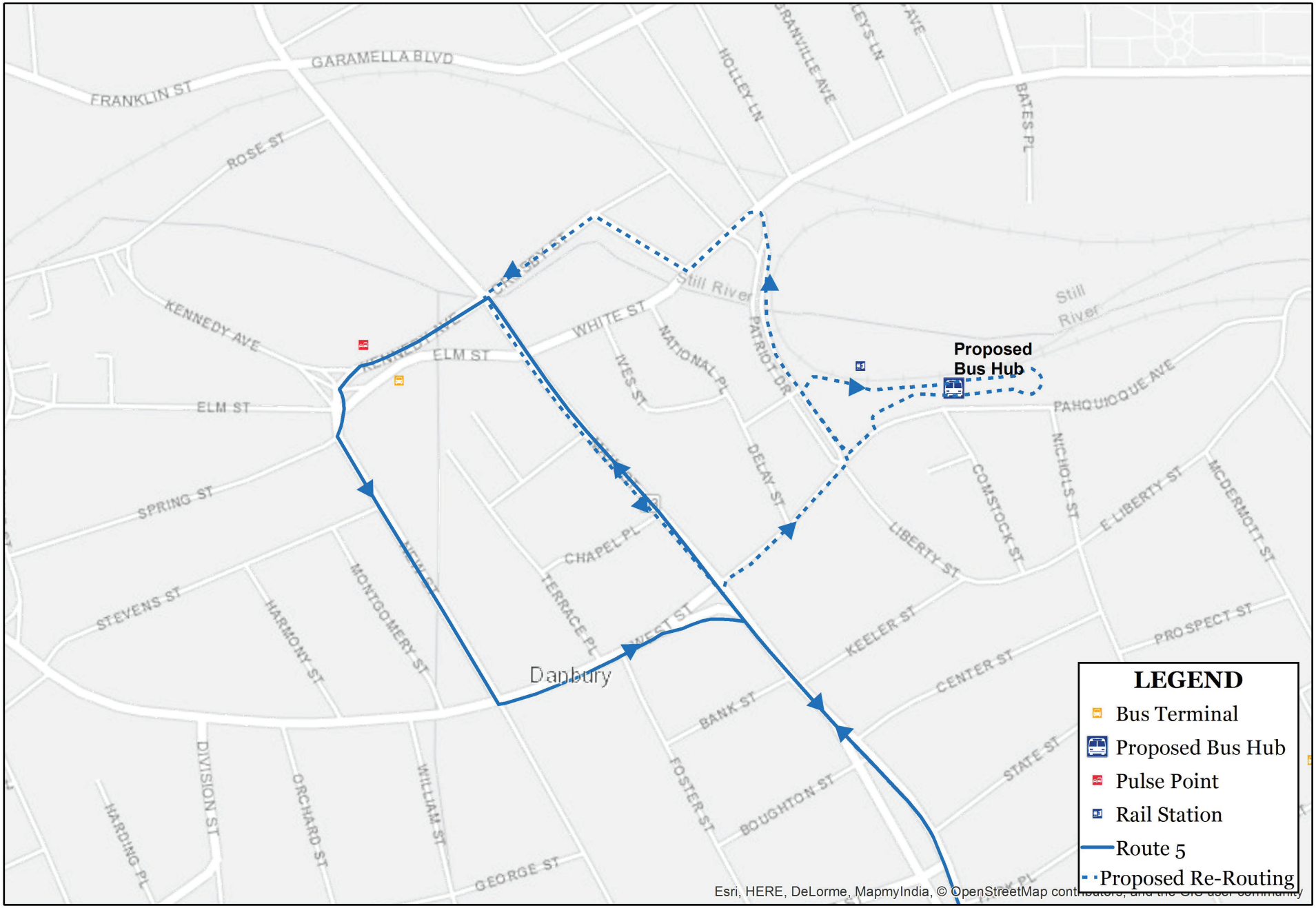


Existing Route and Proposed Re-Routing - Route 3
Danbury, CT



Existing Route and Proposed Re-Routing - Route 4

Danbury, CT

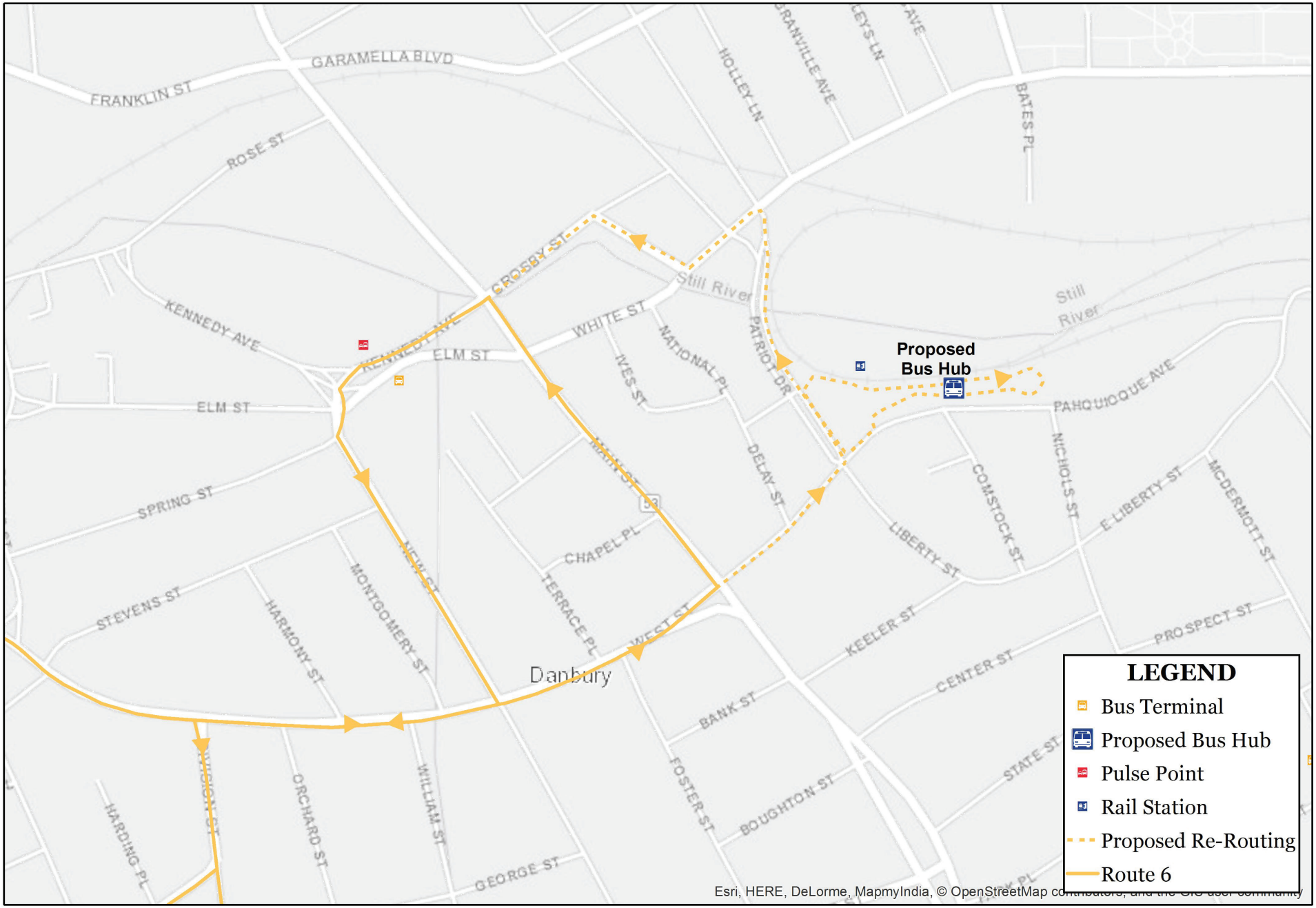


Existing Route and Proposed Re-Routing - Route 5

Danbury, CT

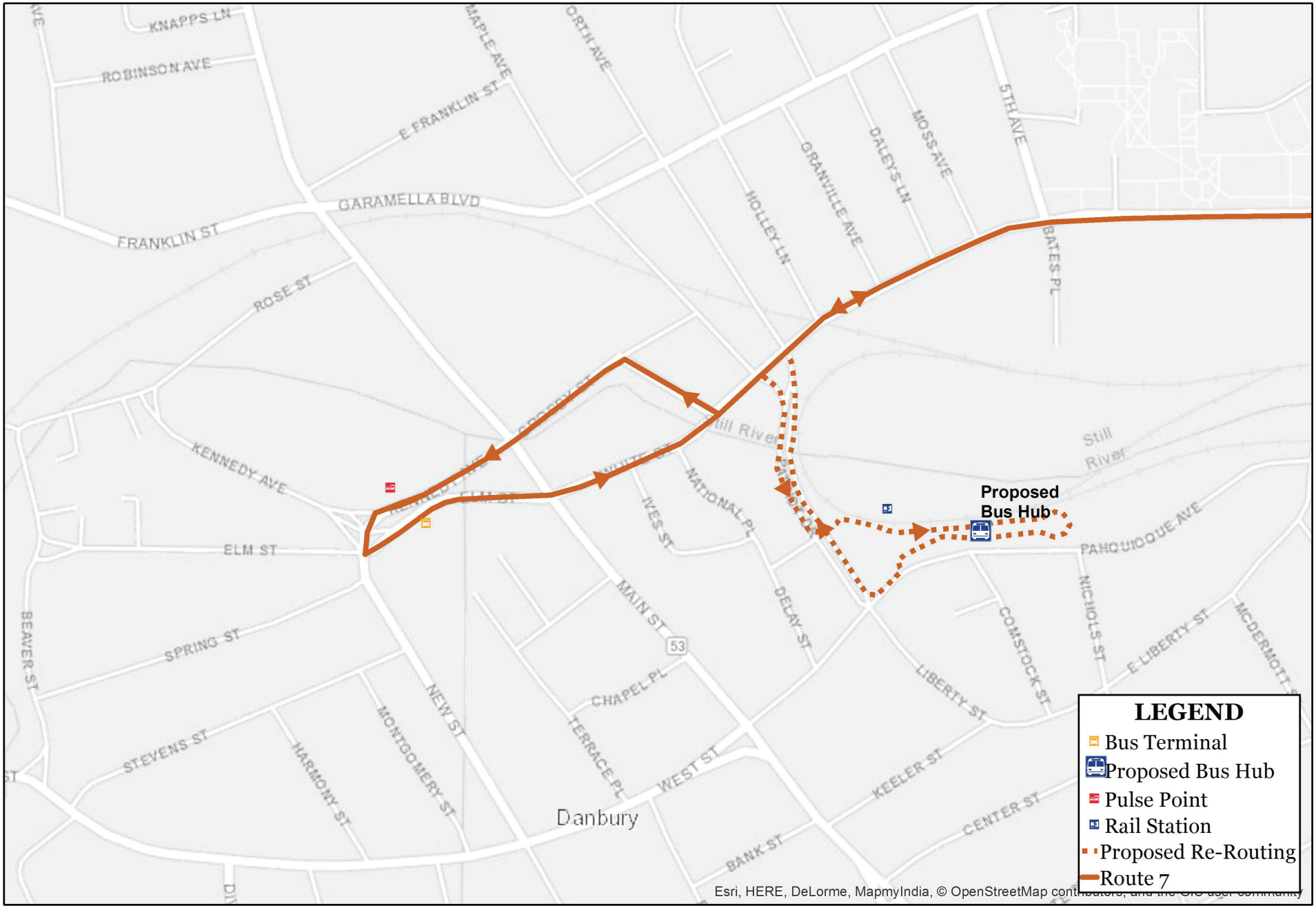
vhb

0 250 500 Feet



Existing Route and Proposed Re-Routing - Route 6

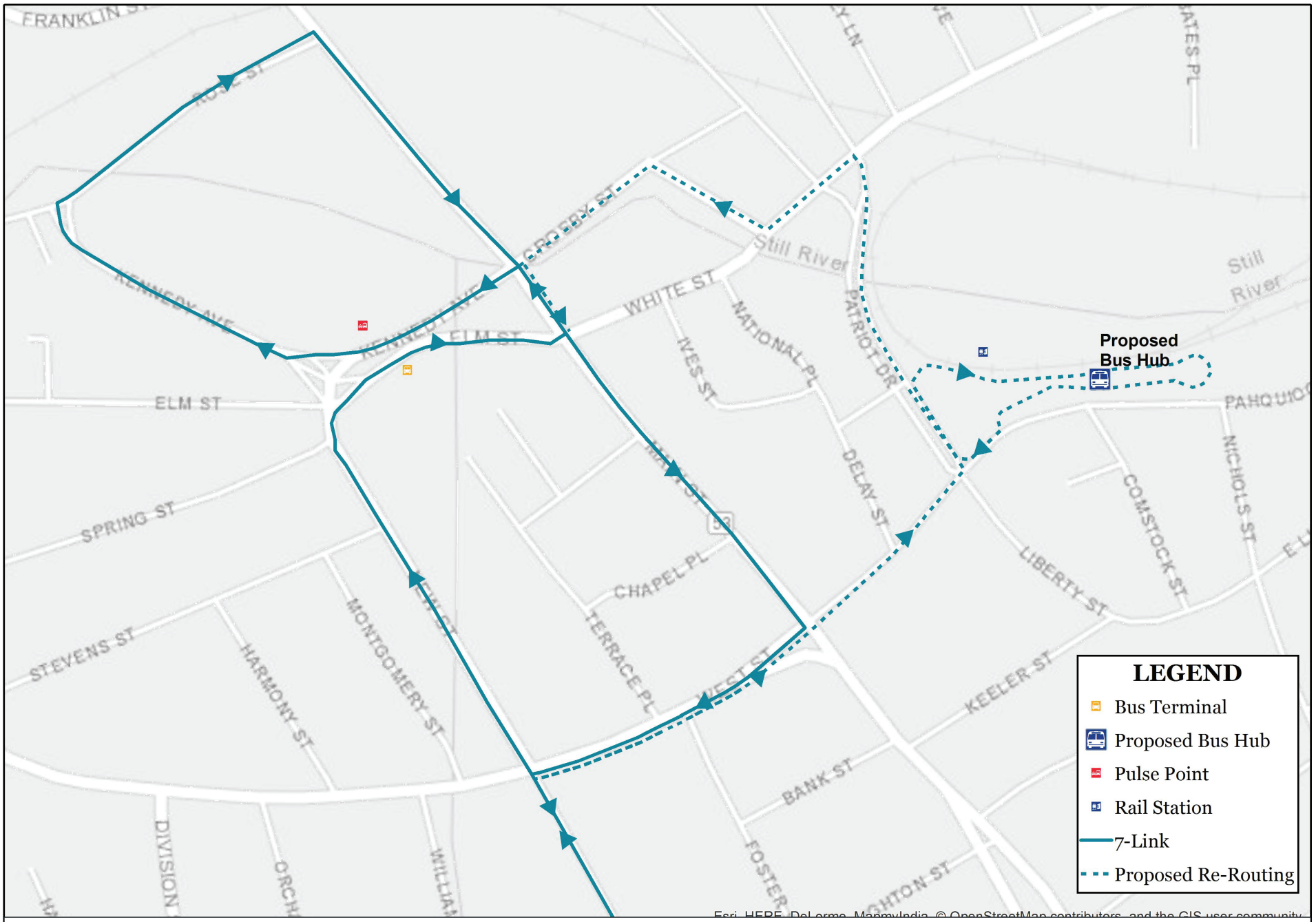
Danbury, CT



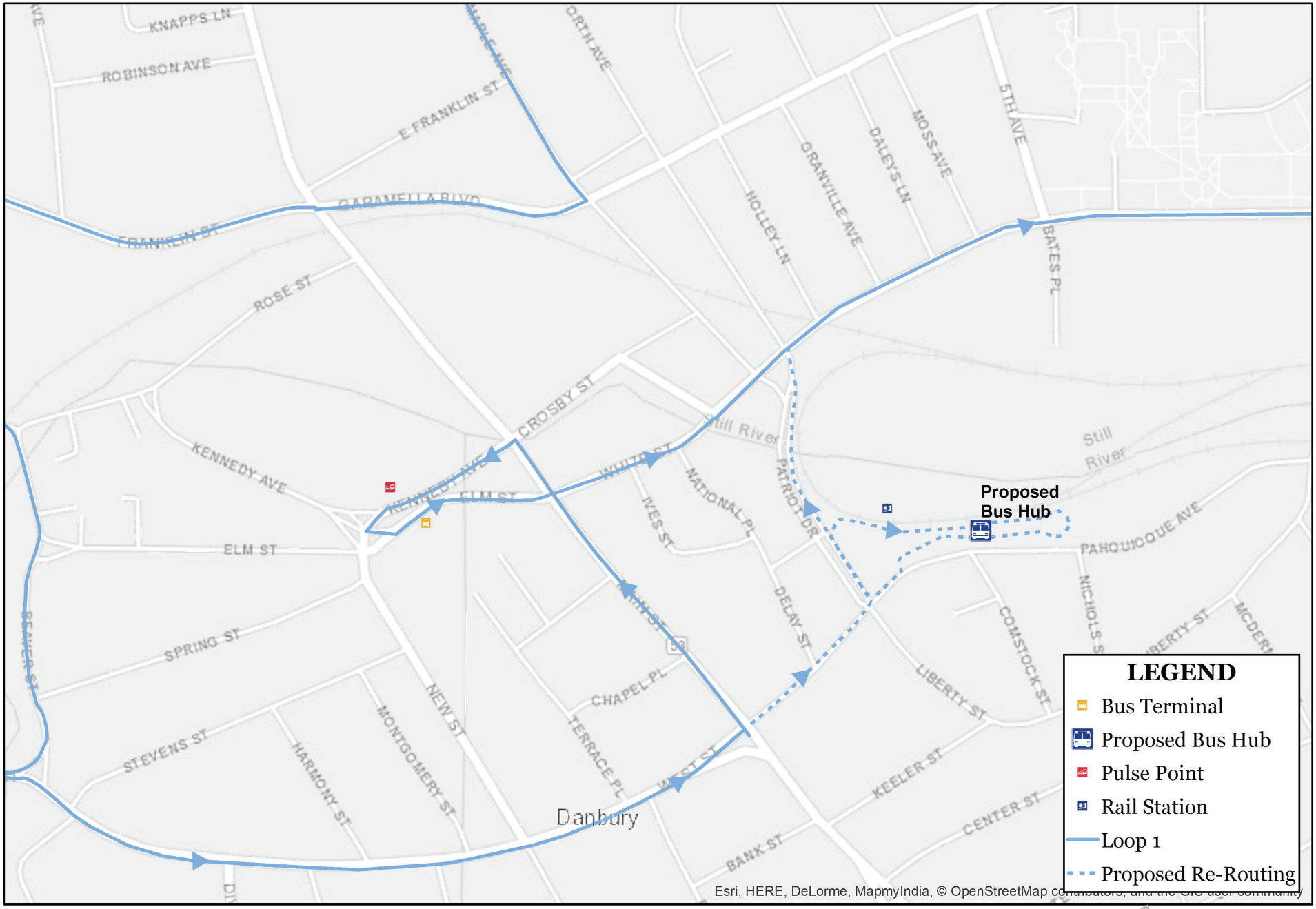
Existing Route and Proposed Re-Routing - Route 7

Danbury, CT

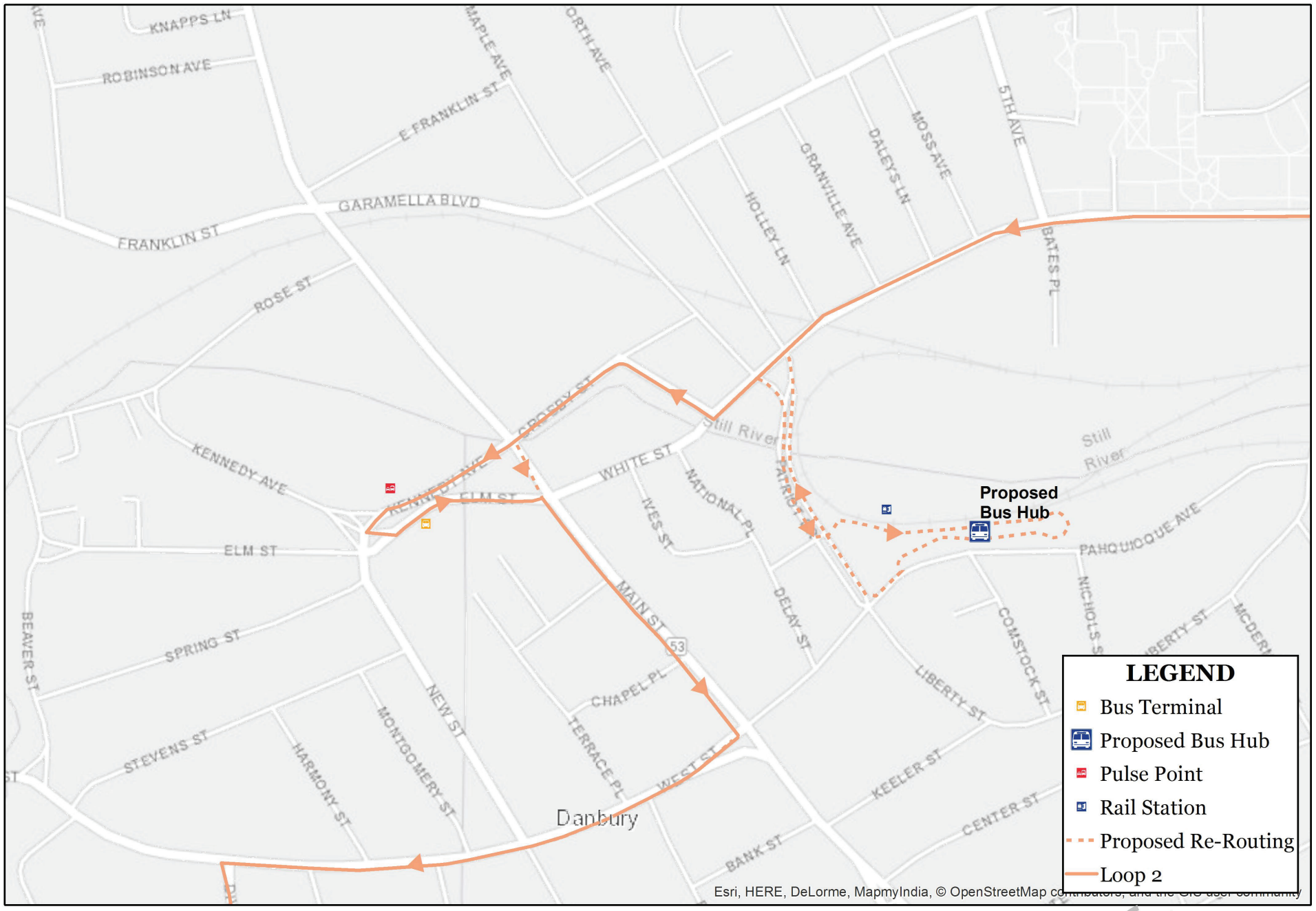
0 250 500 Feet



Existing Route and Proposed Re-Routing - 7-Link
Danbury, CT



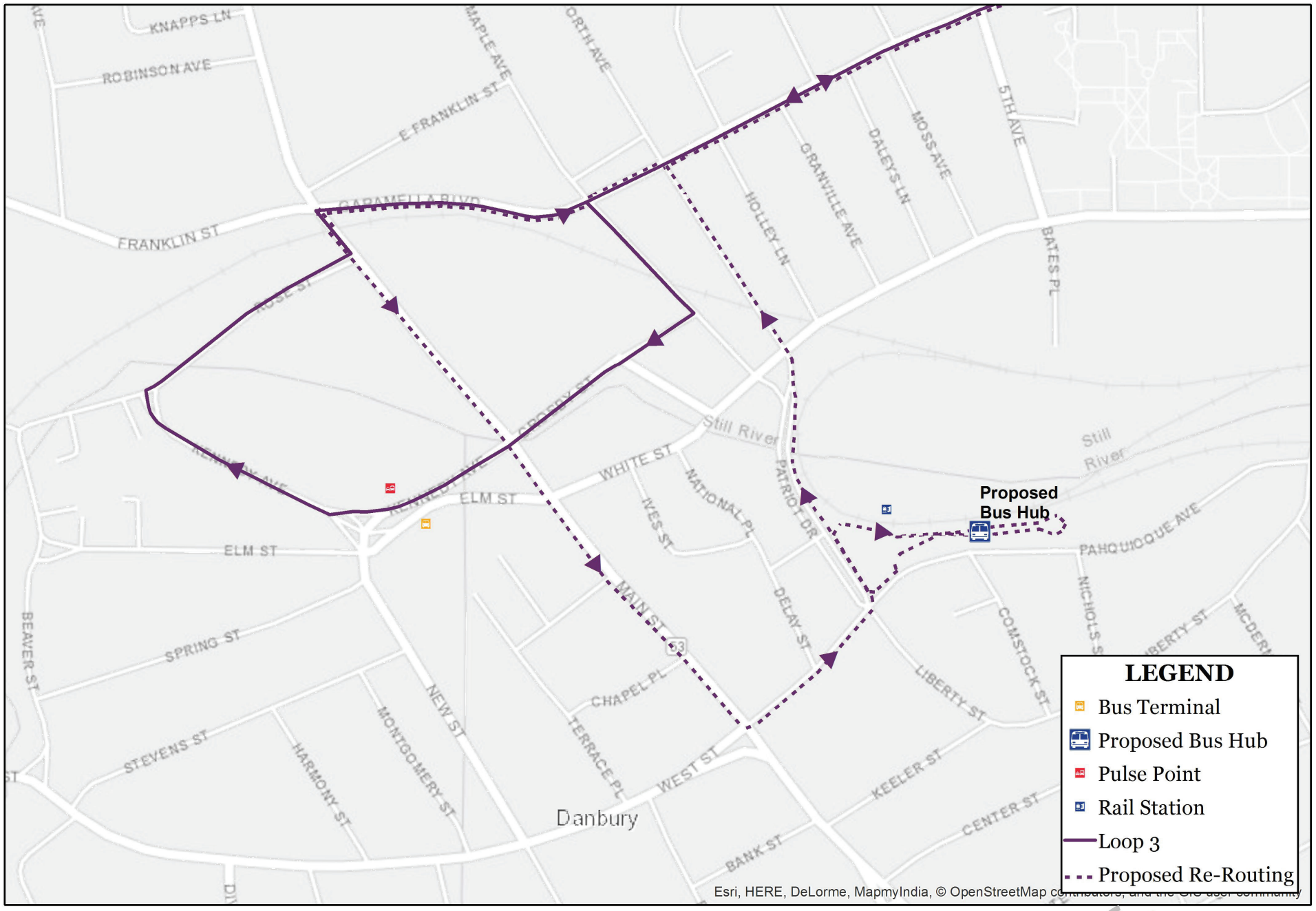
Existing Route and Proposed Re-Routing - Loop 1 - Hospital-Danbury Mall
Danbury, CT



Existing Route and Proposed Re-Routing - Loop 2 - Bethel-Newton Rd
Danbury, CT

vhb

0 250 500 Feet

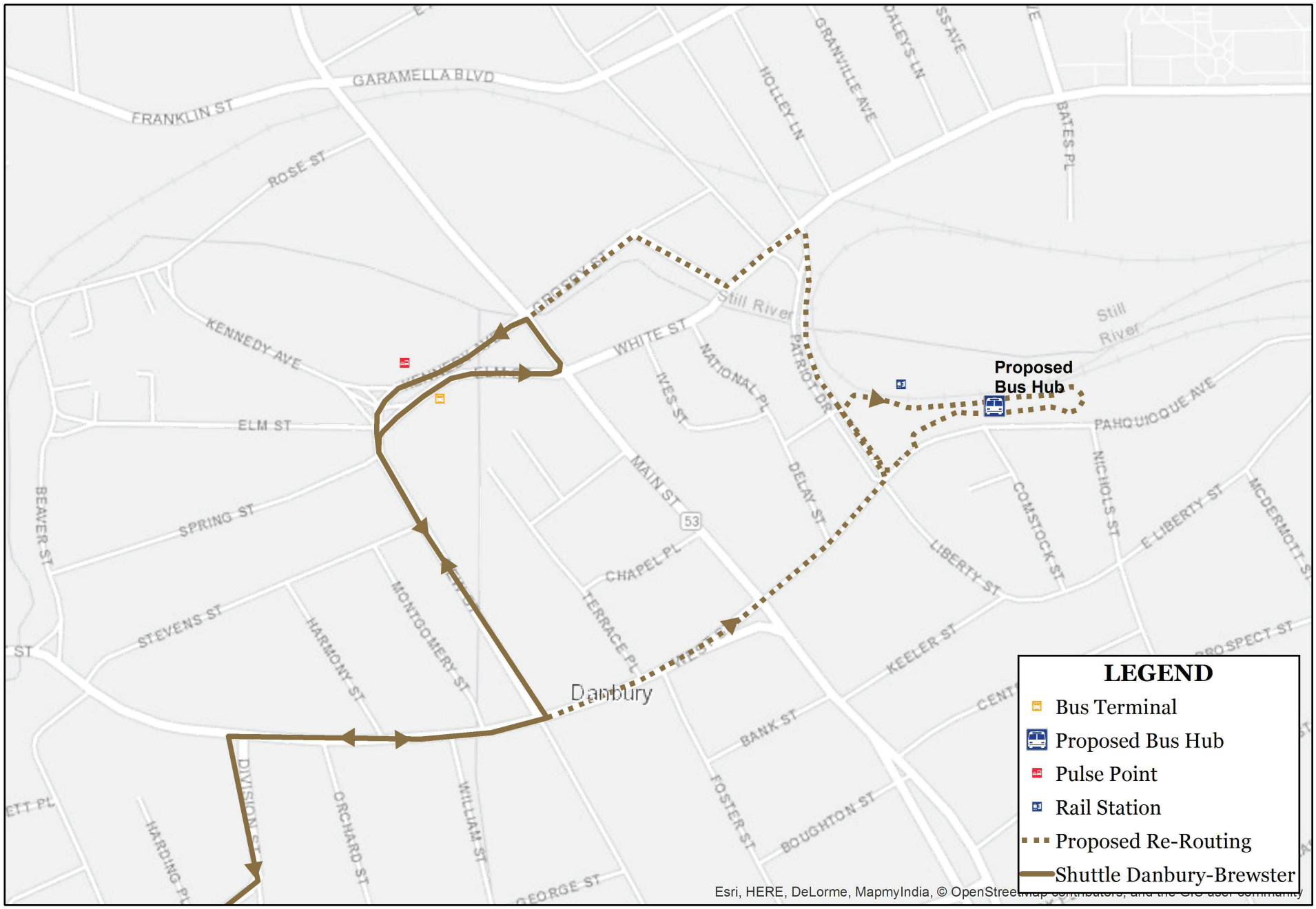


Existing Route and Proposed Re-Routing - Loop 3 - New Milford-Route 7

Danbury, CT

vhb

0 250 500 Feet

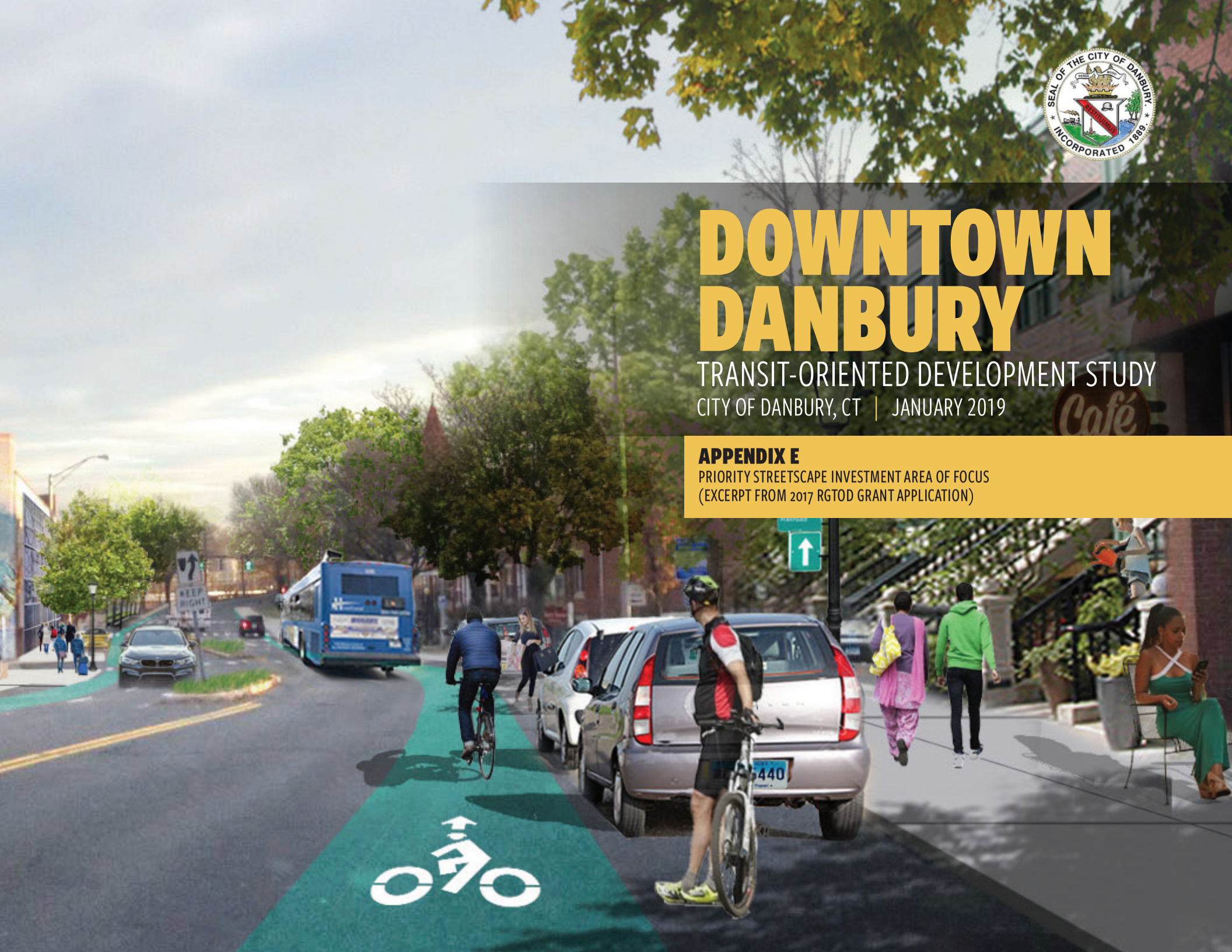


Existing Route and Proposed Re-Routing - Danbury-Brewster Shuttle

Danbury, CT

vhb

0 250 500 Feet



DOWNTOWN DANBURY

TRANSIT-ORIENTED DEVELOPMENT STUDY

CITY OF DANBURY, CT | JANUARY 2019

APPENDIX E

PRIORITY STREETSCAPE INVESTMENT AREA OF FOCUS
(EXCERPT FROM 2017 RGTOD GRANT APPLICATION)

Attachment 03-A

Downtown Danbury TOD Streetscape Renaissance Project Concept Plans

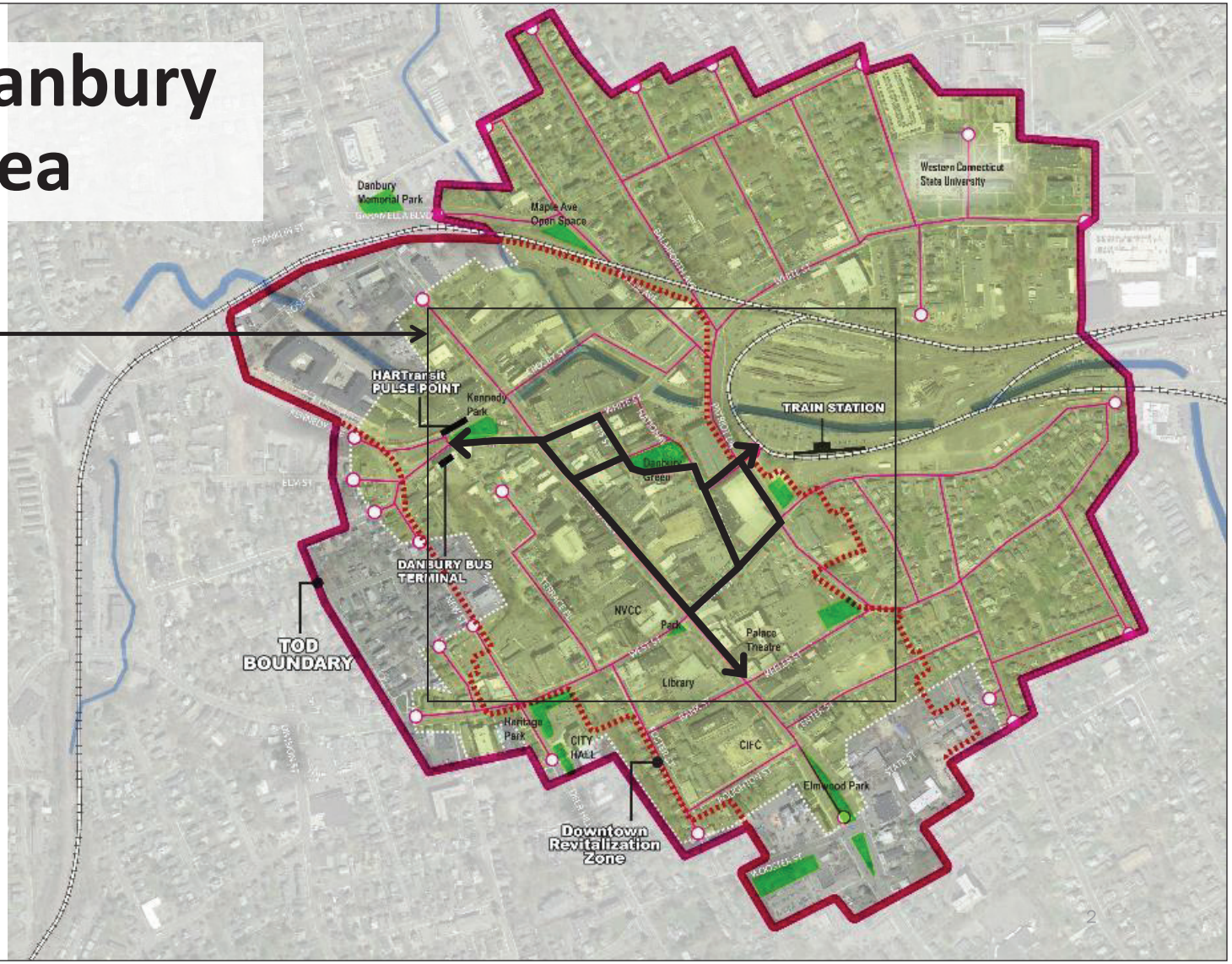
prepared for the OPM TOD Grant Funding Application

June 21, 2017

GOODYCLANCY

Downtown Danbury TOD Study Area

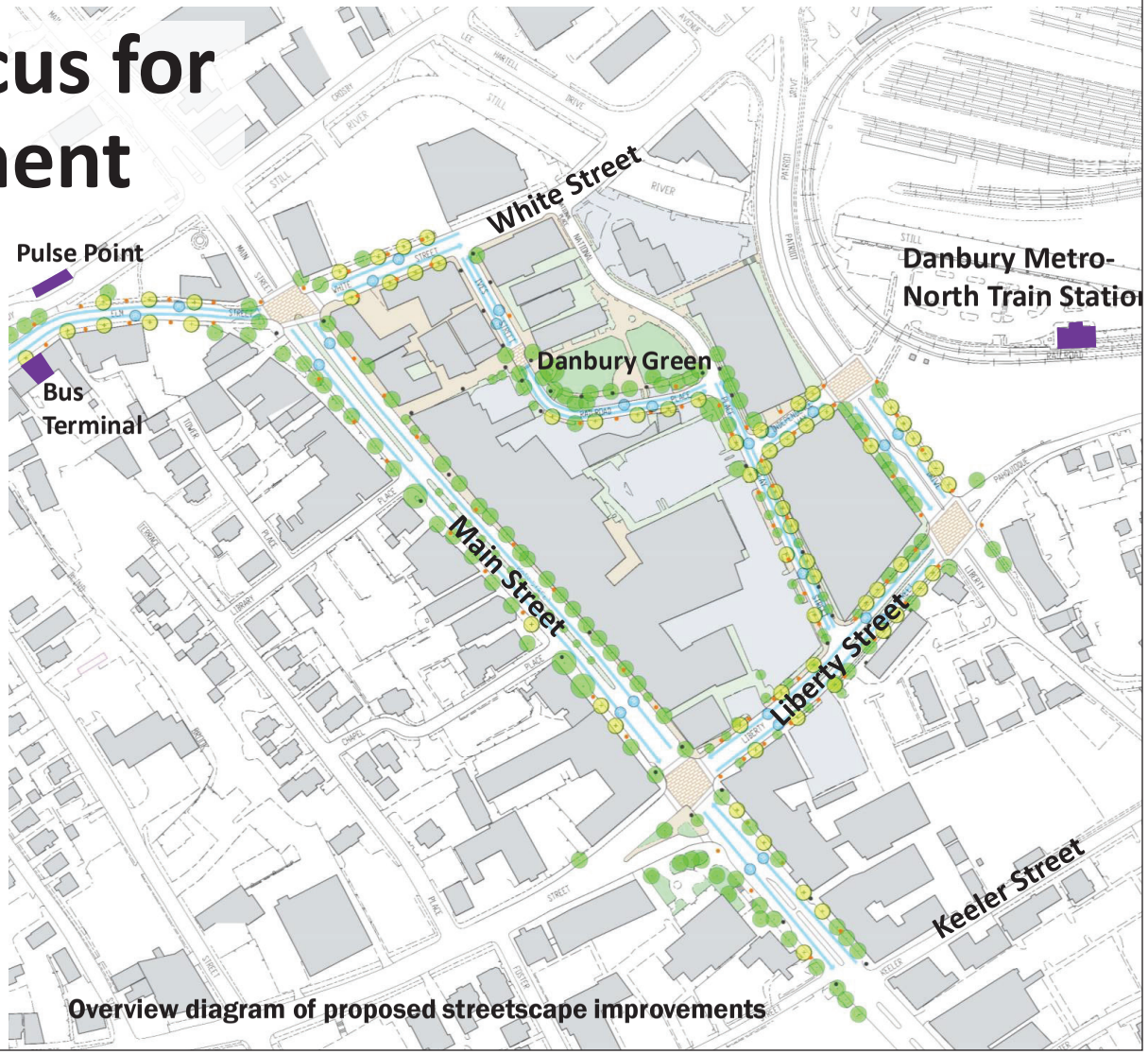
2017 OPM Grant Focus:
Streetscape between Downtown, Danbury Metro-North Train Station, and Bus Facilities



Detailed Area of Focus for Streetscape Investment

Principles:

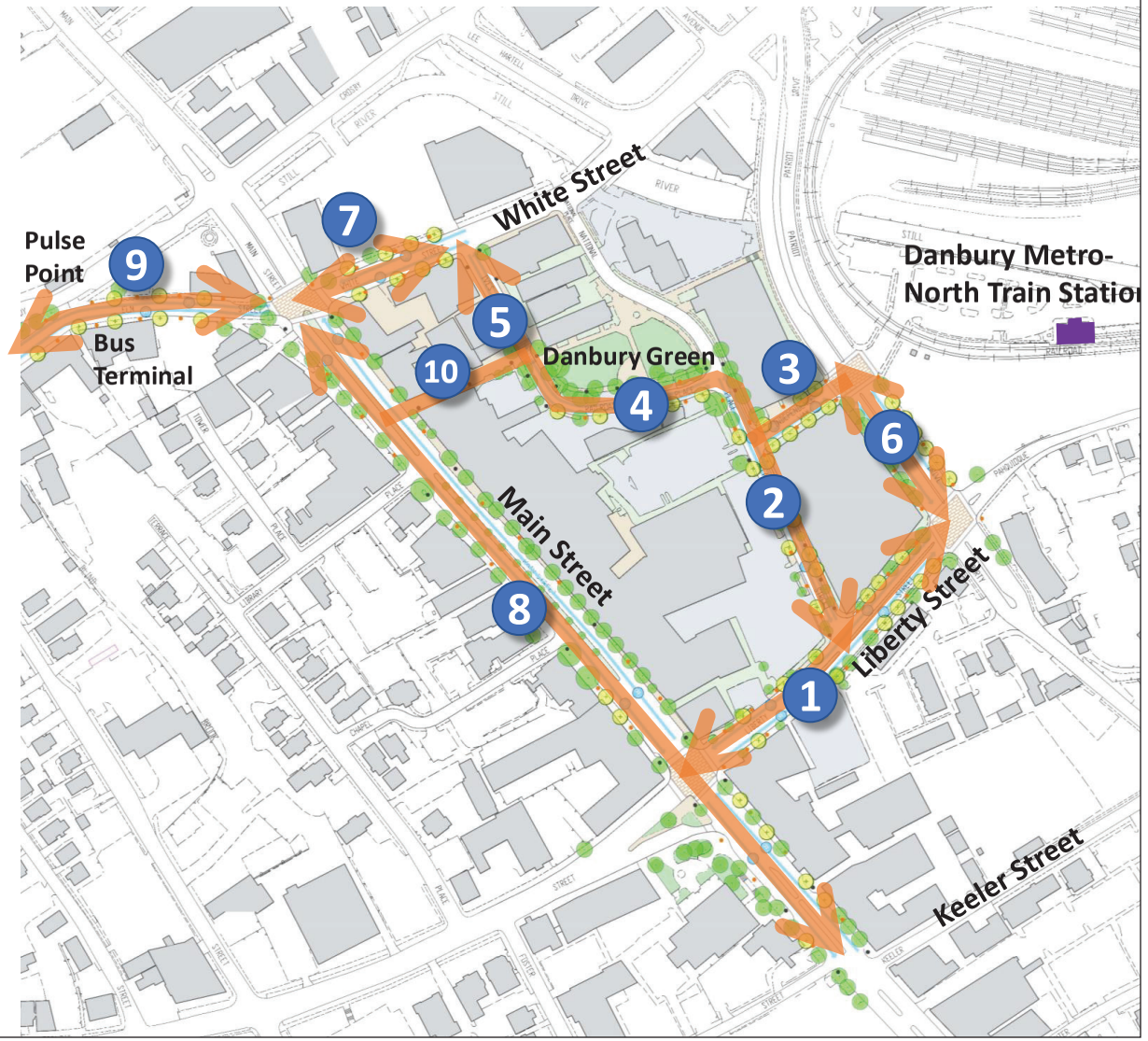
- **Rebuild sidewalks and streetscape** on key streets between Downtown Danbury and transit (Metro-North rail station and bus stations)
- **Provide better and safer pedestrian access** that supports and grows multi-modal transit use
- **Leverage this public investment to catalyze private TOD** that adds vitality in Downtown
- **Revitalize Downtown Danbury** and maintain the momentum of recent mixed-use TOD projects



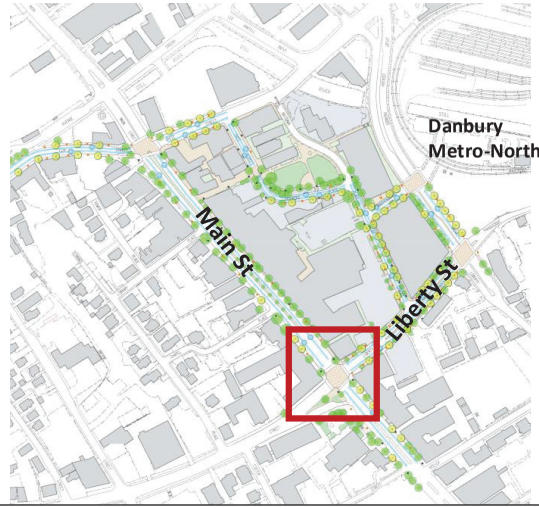
Overview diagram of proposed streetscape improvements

Street Segments

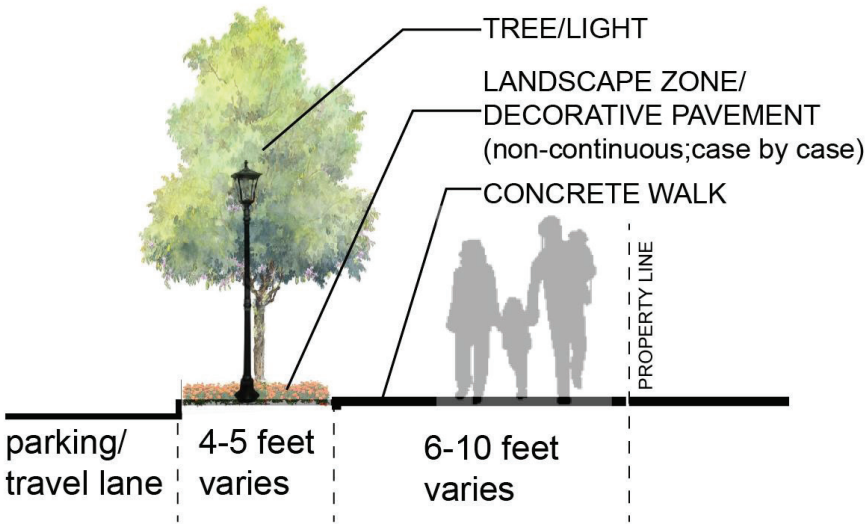
1. Liberty Street
2. Delay Street
3. Independence Way
4. Railroad Place
5. Ives Street
6. Patriot Drive
7. White Street
8. Main Street
9. Elm Street
10. Post Office Walk



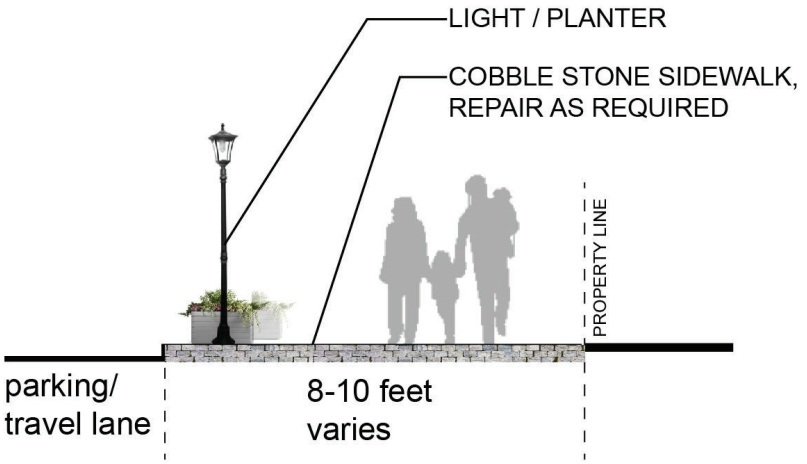
Typical Crosswalks



Typical Sidewalks



Potential Typical Section:
Liberty, Delay, Railroad Place, Independence Way, Elm Street, White Street, and Main Street

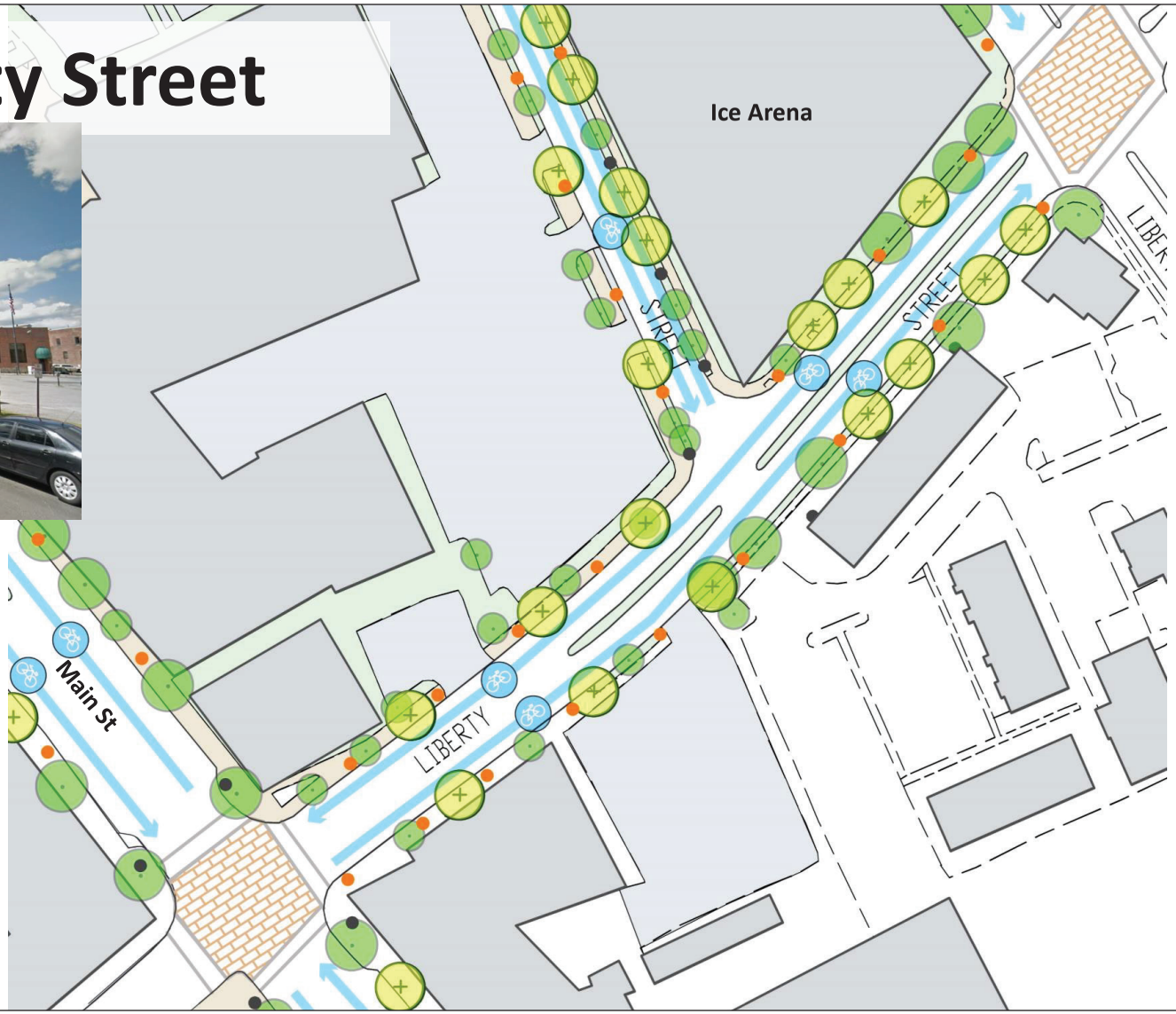


Potential Typical Section:
Ives Street between White and Railroad Place

Example: Liberty Street

LEGEND

- EXISTING TREE
- EXSITING STREET LIGHT
- PROPOSED TREE
- PROPOSED DECORATIVE STREET LIGHT
- SURFACE PARKING
- BUILDING OUTLINE
- EXISTING SIDEWALK
- SHARED AUTO/BIKE LANE (to be designated later)
- SPECIAL PAVING

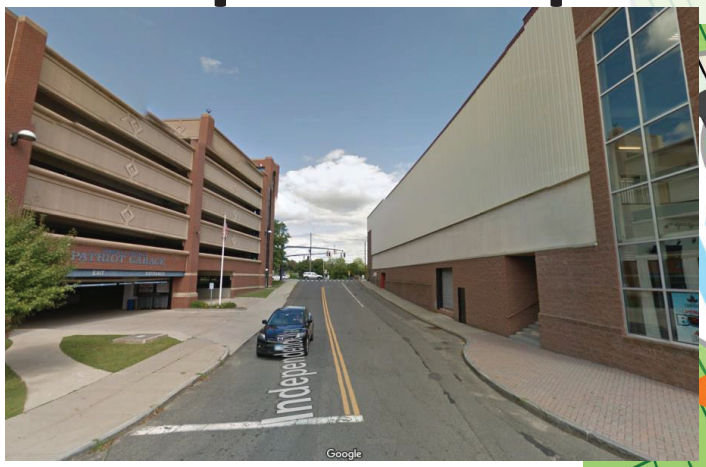


Example: Delay Street

LEGEND

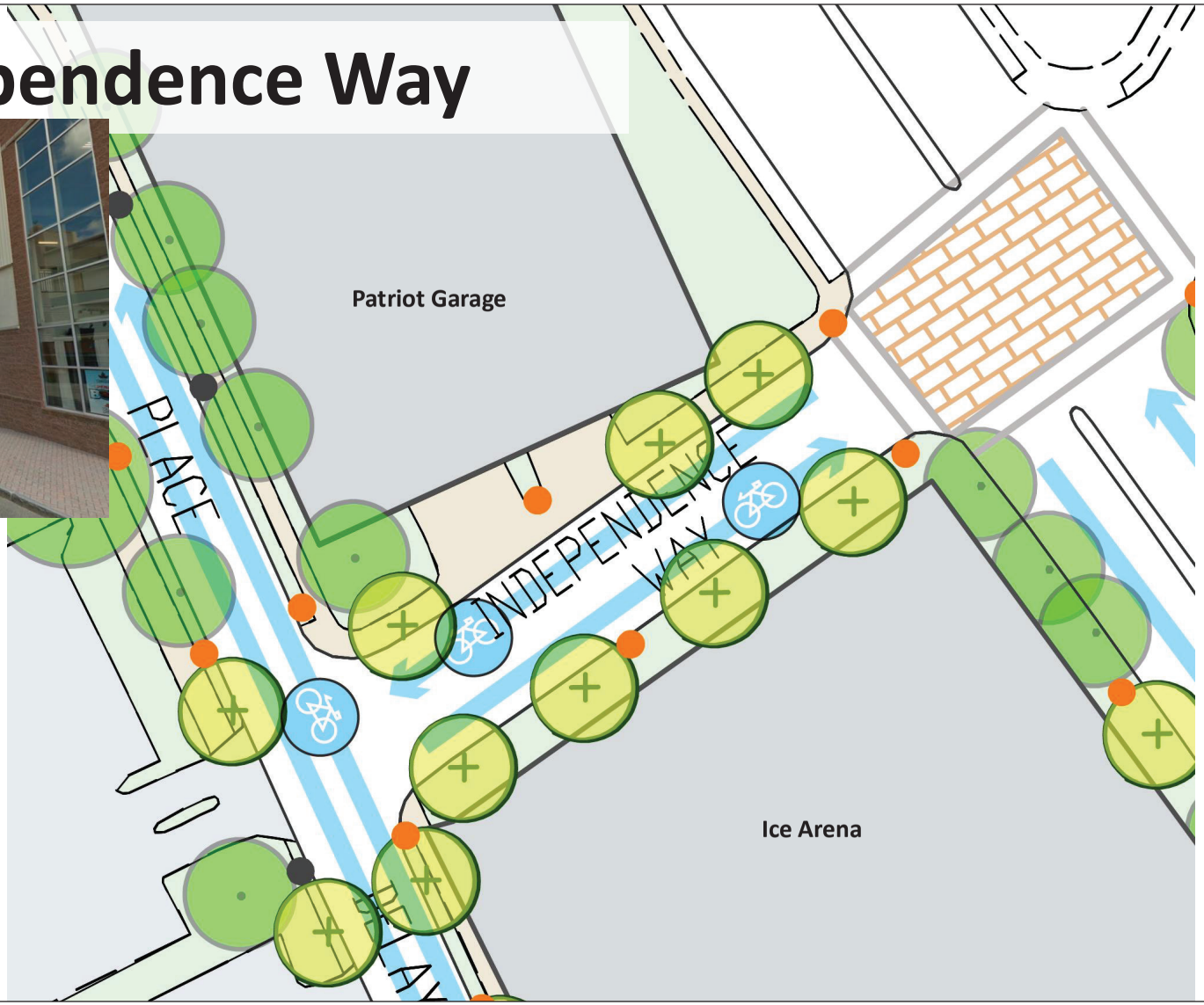
- EXISTING TREE
- EXSITING STREET LIGHT
- PROPOSED TREE
- PROPOSED DECORATIVE STREET LIGHT
- SURFACE PARKING
- BUILDING OUTLINE
- EXISTING SIDEWALK
- SHARED AUTO/BIKE LANE (to be designated later)
- SPECIAL PAVING

Example: Independence Way



LEGEND

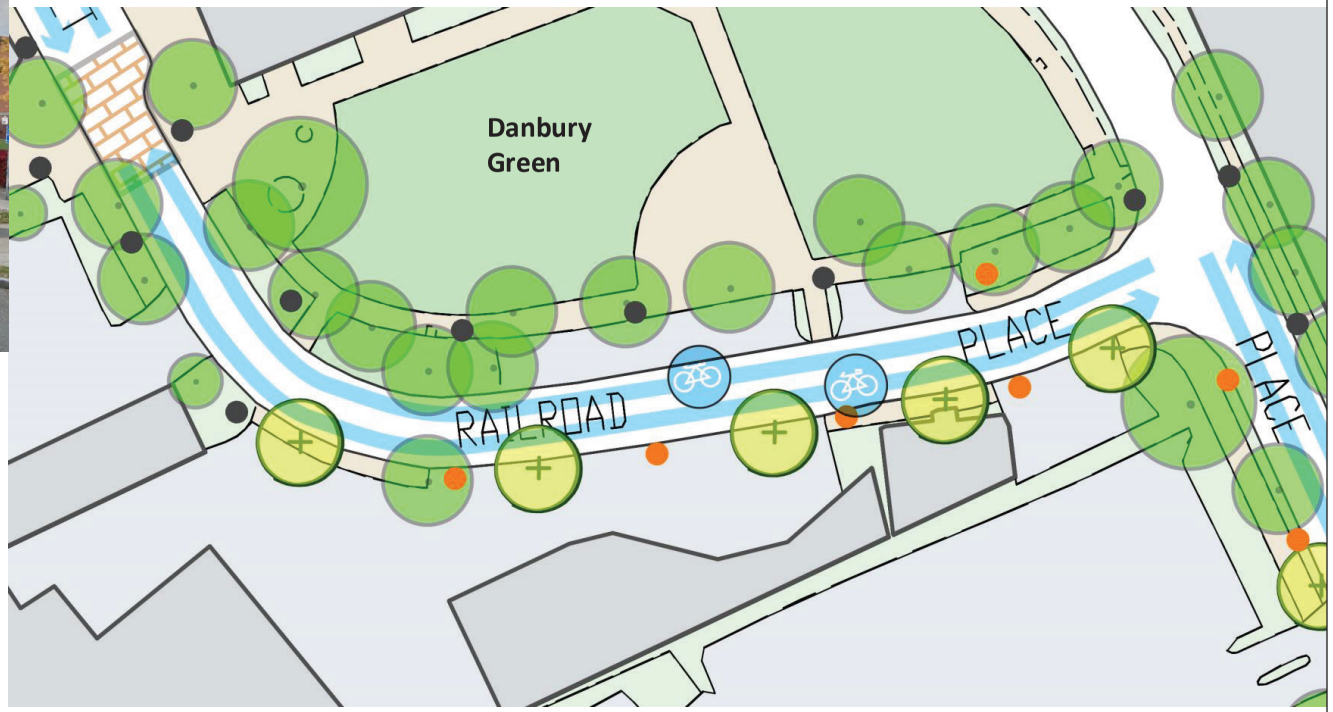
- EXISTING TREE
- EXSITING STREET LIGHT
- PROPOSED TREE
- PROPOSED DECORATIVE STREET LIGHT
- SURFACE PARKING
- BUILDING OUTLINE
- EXISTING SIDEWALK
- SHARED AUTO/BIKE LANE (to be designated later)
- SPECIAL PAVING



Example: Railroad Place

LEGEND

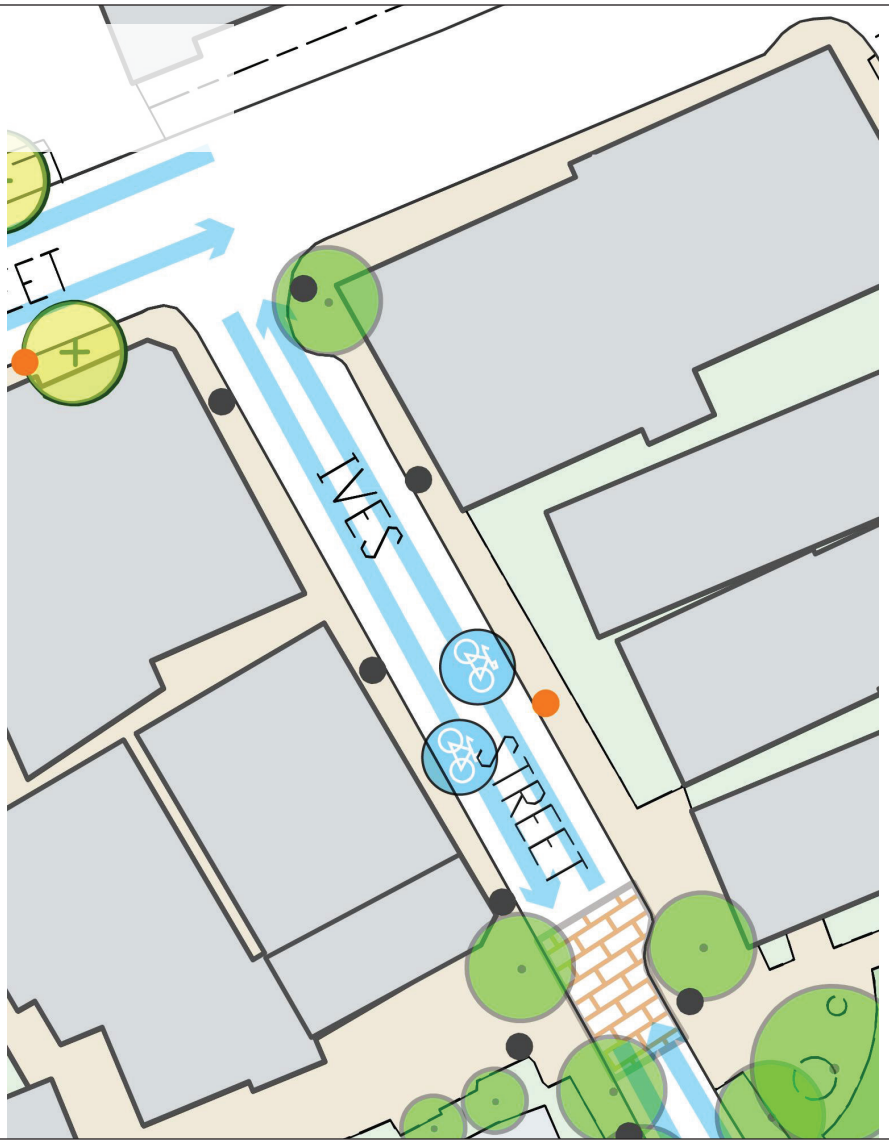
- EXISTING TREE
- EXSITING STREET LIGHT
- PROPOSED TREE
- PROPOSED DECORATIVE STREET LIGHT
- SURFACE PARKING
- BUILDING OUTLINE
- EXISTING SIDEWALK
- SHARED AUTO/BIKE LANE (to be designated later)
- SPECIAL PAVING



Example: Ives Street

LEGEND

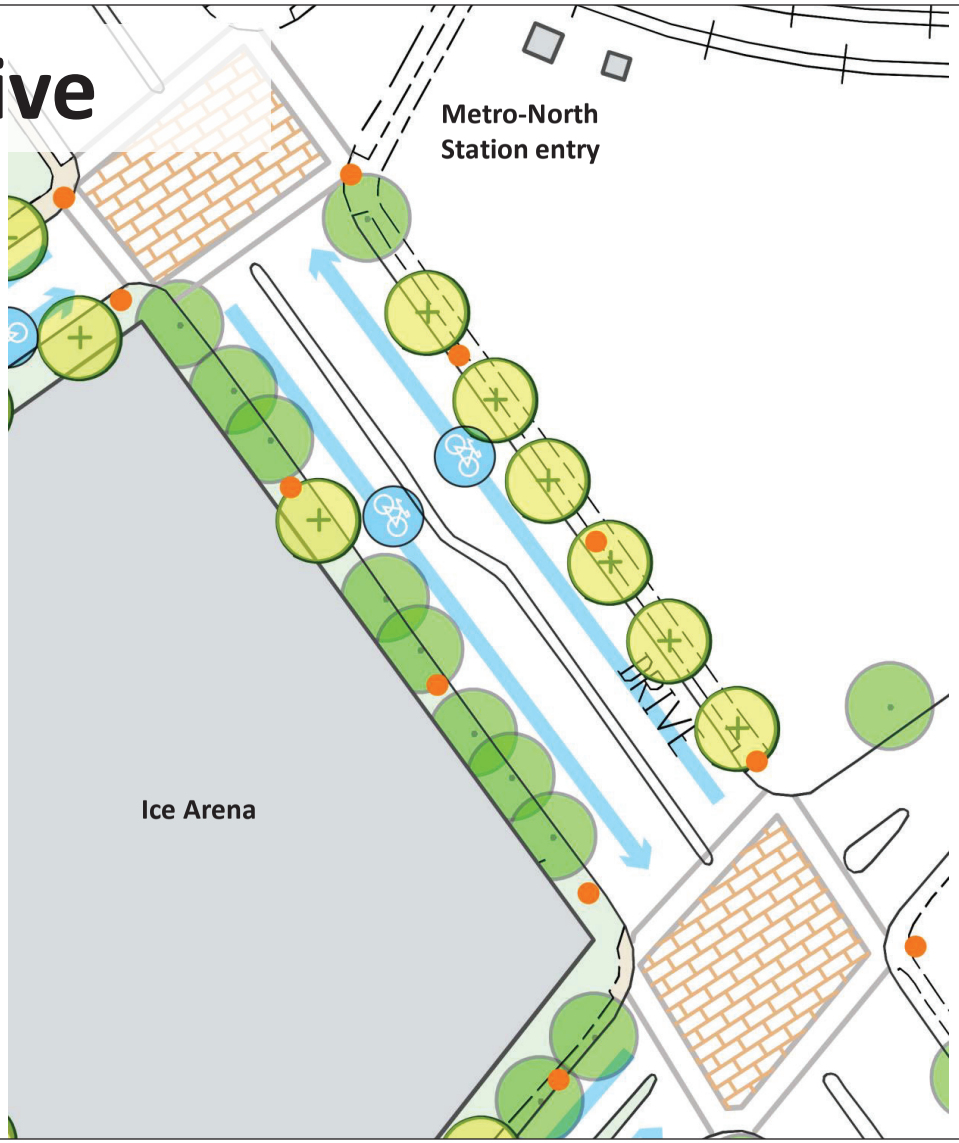
- EXISTING TREE
- EXSITING STREET LIGHT
- PROPOSED TREE
- PROPOSED DECORATIVE STREET LIGHT
- SURFACE PARKING
- BUILDING OUTLINE
- EXISTING SIDEWALK
- SHARED AUTO/BIKE LANE (to be designated later)
- SPECIAL PAVING



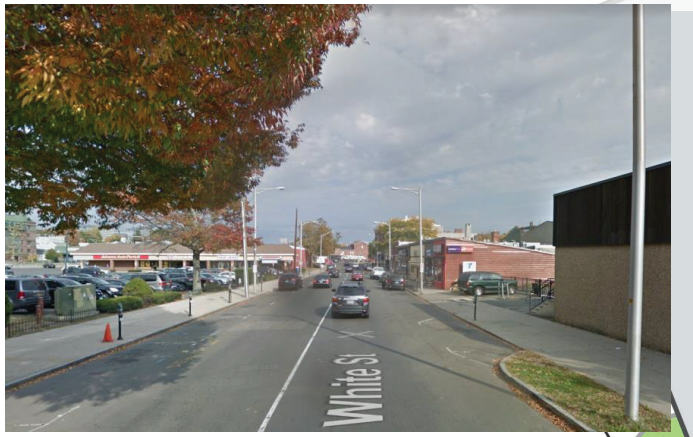
Example: Patriot Drive

LEGEND

- EXISTING TREE
- EXSITING STREET LIGHT
- PROPOSED TREE
- PROPOSED DECORATIVE STREET LIGHT
- SURFACE PARKING
- BUILDING OUTLINE
- EXISTING SIDEWALK
- SHARED AUTO/BIKE LANE (to be designated later)
- SPECIAL PAVING



Example: White Street



LEGEND

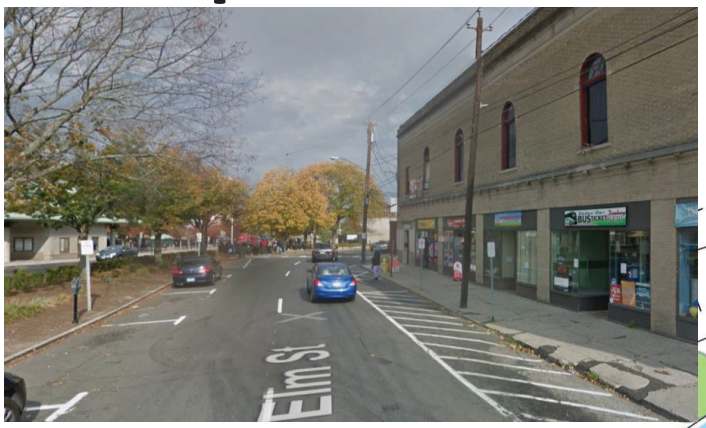
- EXISTING TREE
- EXSITING STREET LIGHT
- PROPOSED TREE
- PROPOSED DECORATIVE STREET LIGHT
- SURFACE PARKING
- BUILDING OUTLINE
- EXISTING SIDEWALK
- SHARED AUTO/BIKE LANE (to be designated later)
- SPECIAL PAVING

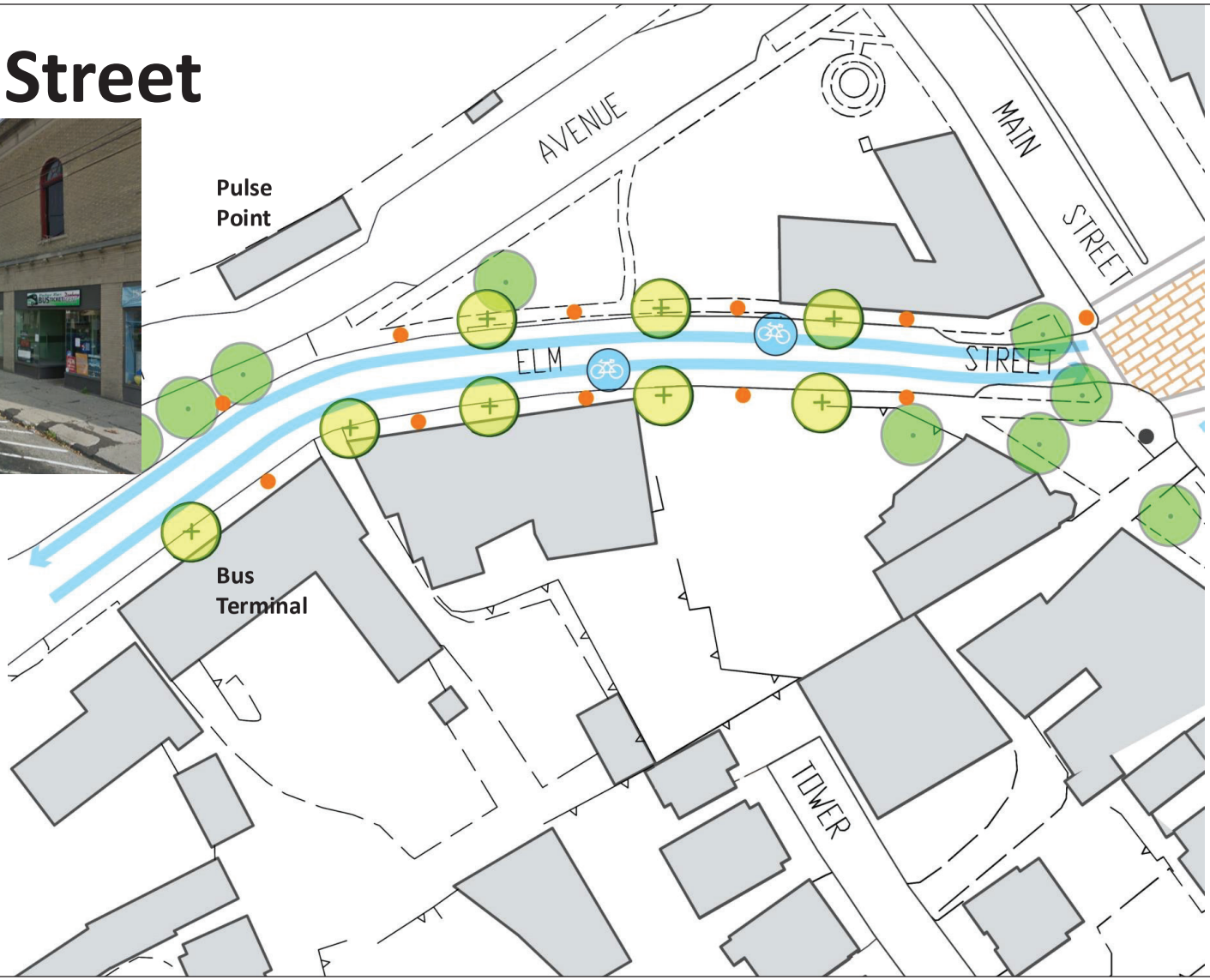
Example: Main Street

LEGEND

- EXISTING TREE
- EXSITING STREET LIGHT
- PROPOSED TREE
- PROPOSED DECORATIVE STREET LIGHT
- SURFACE PARKING
- BUILDING OUTLINE
- EXISTING SIDEWALK
- SHARED AUTO/BIKE LANE (to be designated later)
- SPECIAL PAVING

Example: Elm Street





LEGEND

- EXISTING TREE
- EXSITING STREET LIGHT
- PROPOSED TREE
- PROPOSED DECORATIVE STREET LIGHT
- SURFACE PARKING
- BUILDING OUTLINE
- EXISTING SIDEWALK
- SHARED AUTO/BIKE LANE (to be designated later)
- SPECIAL PAVING

Example: Post Office Walk

LEGEND

- EXISTING TREE
- EXSITING STREET LIGHT
- PROPOSED TREE
- PROPOSED DECORATIVE STREET LIGHT
- SURFACE PARKING
- BUILDING OUTLINE
- EXISTING SIDEWALK
- SHARED AUTO/BIKE LANE (to be designated later)
- SPECIAL PAVING